LOUDOUN COUNTY PUBLIC SCHOOLS
PLANNING AND LEGISLATIVE SERVICES
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July 22, 2010

Mr. Marchant Schneider
Loudoun County Planning Department
1 Harrison Street, S.E., 3rd Floor
Leesburg, VA 20177

Re: ZMAP 2010-0001 and SPEX 2010-0003, HS-7 Dulles South and Elementary School, Goshen Road Assemblage, Response to Second Review Referral Comments

Dear Marchant:

Please find enclosed the responses to the second review referral comments for the proposed HS-7 high school and elementary school at the Goshen Road Assemblage in Dulles South. We are providing 10 sets of this cover letter, the referral responses and the revised ZMAP/SPEX Plat. Please note that the following changes have been incorporated into the Plat:

- Reforestation areas along with the parameters for the reforestation have been identified
- Plant materials to be utilized have been identified as indigenous
- The sewer line has been realigned to minimize impacts to green infrastructure elements
- A sidewalk has been added on the south side of Road B and additional crosswalks incorporated at Road B and Northstar Boulevard and the internal school road
- Additional pedestrian network connections have been added to provide a connection between the elementary school and the trail that serves Westport and an additional sidewalk has been added along the drive adjacent to the discus field
- Relocated Route 659 has been identified as Relocated Route 659/Northstar Boulevard
- Typical sections for Roads A and B have been added as an additional Sheet (7)
- The elementary school play field has been reduced in size to accommodate a track. The prior field playing area was 360" x 225" and the new area is 228' x 138'. LCPS felt the elementary school program would be better served with a smaller field with a track.

E-mail: lcpsplan@loudoun.k12.va.us
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LCPS/Goshen Road Assemblage
ZMAP 2010-0001/SPEX 2010-0003
July 22, 2010

We very much appreciate the meeting on Wednesday, July 21, 2010, to review the Office of Transportation Services (OTS) comments. As a follow-up to our meeting we are providing additional analysis for Comments 6 and 11. We would be happy to meet with OTS Staff again to review in detail if that would be helpful.

I will be out of the office from July 23 to August 9. If you have any questions or need additional information you may contact Sam Adamo or our consultants (Chris Mohn at Bowman Consulting (703-443-2400) or Tushar Awar at Gorove Slade (703-787-9595)). Thank you for your continued assistance and guidance.

Sincerely,

Sara Howard-O'Brien, AICP
Land Management Supervisor

Loudoun County Public Schools
HS-7 Dulles South and Elementary School
ZMAP 2010-0001, SPEX 2010-0003
Response to Second Referral Comments
July 22, 2010

Zoning Administration
Comments dated June 23, 2010

There are no outstanding issues.

Parks and Recreation
Comments dated July 8, 2010

There are no outstanding issues.

Environmental Review Team
Comments dated July 8, 2010

Comment 1: A "Tree Cover Evaluation – Southern Portion of Site", prepared by Bowman Consulting, dated December 15, 2009, was provided with this submission. The evaluation identified 24 individual trees with a diameter at breast height (DBH) of 30 inches or greater. As previously stated, the hardwood stand located in the southern portion of the property is the most desirable tree cover for preservation on the property. Staff recommends exploring all opportunities to preserve portions of the tree stand and large individual tree (with a minimum condition rating of 60) within the development layout, including perimeter buffers and pocket tree save areas. [Revised General Plan (RGP) Forests, Trees, and Vegetation Policy 1]

Response: LCPS acknowledges that the trees in the southern portion of the property are desirable hardwood. However, in order to utilize the site for an elementary school it will be necessary to remove the trees. As development proceeds, LCPS will utilize existing trees to the extent possible within the perimeter buffers. As a practical matter, the site is tight and it may not be possible to preserve existing trees. In the 4/20/10 ERT referral, and as outlined below in Comment 2, County staff recommended recapturing the loss of tree canopy by committing to reforestation in other areas of the site. LCPS has incorporated the recommended reforestation areas as recommended by staff. Please refer to Comment 2 below.

Comment 2: During the June 28, 2010, site visit, two reforestation opportunities were identified and discussed: 1) open floodplain immediately adjacent to the South Fork of Broad Run, including the emergent wetland, outside of the existing and proposed sanitary sewer easements; and 2) open areas within the 50-foot GI Buffer, adjacent to the intermittent stream in the western portion of the property, outside of the proposed sanitary sewer easement. Based on site conditions, deer browse potential, and minimizing cost, the County Urban Forester recommends the use of 3-gallon containerized materials within the floodplain and bare root seedlings with tubes outside of the floodplain. Staff recommends

that the reforestation areas be identified on sheets 3 (Special Exception/Rezoning Plat) and 6 (Water and Sewer Facilities Map). Attachment A and Photographs 1 and 2 identify the approximate location of the reforestation areas. Staff further recommends that a reforestation commitment be provided specifying the following: 1) the applicant shall work with the County Urban Forester on the development of the reforestation plan; 2) the reforestation plan shall be submitted to the County Urban Forester for review and approval prior to the approval of the first site plan; 3) plant material shall consist of 3-gallon containerized native trees within the floodplain and bare root seedlings with tubes outside of the floodplain; 4) the reforestation shall be implemented prior to issuance of the first certificate of occupancy; 5) the applicant shall ensure a minimum of 80 percent of the initial planting is determined to be established after two growing seasons; 6) an annual inspection shall be conducted by the applicant and the County Urban Forester to verify establishment; and 7) if the 80 percent establishment isn't achieved after the second growing season, a onetime planting to bring the project to full stocking shall be conducted by the applicant.

Consistent with RGP Forests, Trees, and Vegetation Text and Policy 1 on Page 5-32, reforestation efforts will help to recapture tree canopy that will be lost as a result of the project as well as increase riparian function and associated water quality benefits.

Response: LCPS appreciates the staff meeting (June 28, 2010) with our consultants to review the proposed reforestation areas. The recommended areas will be reforested as a part of the site development in accord with the outlined conditions. These areas have been identified on the SPEX plat Sheets 3 and 6 and the parameters for reforestation, as recommended by staff, have been noted on the plat.

Comment 3: The applicant's responses state that the proposed plan incorporates an enhanced extended detention pond, west of the stadium. Staff appreciates this enhanced water quality measure. However, to provide a more comprehensive enhanced water quality approach, staff recommends that all extended detention ponds (dry ponds) be designed as enhanced extended detention ponds (dry ponds with shallow marsh plantings). [Revised 1993 LCZO Section 6-1310(H) and RGP Surface Water Policy 5]

Response: The only extended detention pond is the pond west of the stadium. The other stormwater facilities consist of bioretention and the offsite wet pond.

Comment: 4: The enhanced extended detention pond, west of the stadium, corresponds with a proposed sanitary sewer line, which is problematic from a maintenance perspective. Please revise the pond location or sanitary sewer alignment. [FSM Section 5.225.A.4]

Response: LCPS apologizes. This is a SPEX Plat/Site Plan mapping error. The sewer line will not be located in the pond. The SPEX Plat has been amended.

Comment: 5: Staff recommends relocating the 8-inch sanitary sewer line to align with the existing ford crossing the South Fork Broad Run and to connect to the existing sanitary sewer at the next manhole to the west. These adjustments would minimize tree cover loss adjacent to the stream as well as avoid wetland impacts. Attachment B depicts the recommended sanitary sewer alignment and connection (blue). [RGP Forests, Trees, and Vegetation Policy 1 and River and Stream Corridor Resources Policy 23]

Response: The sewer line has been realigned as recommended and aligned to meet Loudoun Water design standards.

Loudoun Water
Comments dated July 14, 2010

There are no outstanding issues.

Community Planning
Comments dated July 13, 2010

Forest Resources

Comment 1: Staff recommends that the applicant commit to the reforestation of the open floodplain associated with the South Fork of Broad Run and the open areas within the 50-foot Green Infrastructure buffer adjacent to the intermittent stream on the western portion of the property, with priority to the floodplain. Also, to avoid or minimize further tree cover loss and to allow for the reforestation of the 50-foot Green Infrastructure buffer, staff recommends that the 8-inch sanitary sewer line and easement be located outside of the 50-foot Green Infrastructure buffer to the extent possible. Additionally, staff recommends that the line be adjusted within the floodplain to avoid wetland impacts.

Response: LCPS will reforest the recommended areas in accord with Community Planning and ERT recommendations. Please also reference Response to ERT Comment 2 above. The sewer line has also been realigned outside the GI buffer to the extent possible. We wish to note that SWM/BMP requirements and the need to facilitate sewer extensions to the rest of the sewer shed make it impractical to completely relocate the sewer west of the baseball field.

Buffering & Planting Enhancements

Comment 2: Staff recommends that the applicant preserve existing tree stands and large individual trees where possible, including within perimeter buffers and isolated tree stands.

Given the prominence, size, and importance of the enhanced buffer areas as habitat, staff recommends that the applicant commit to the use of indigenous plants for these plantings in consultation with the County Urban Forester. Such trees could include American Holly (Ilex opaca), Loblolly Pine (Pinus taeda), Shortleaf Pine (Pinus echinata), Eastern White Pine (Pinus strobus), and Eastern Red Cedar (Juniperus virginiana). Trees should be spaced to accommodate mature sizes.

Response: LCPS will utilize existing trees to the extent possible within the perimeter buffers. As a practical matter, the site is tight and it may not be possible to preserve existing trees. LCPS also commits to the use of indigenous plants for landscaping and will comply with the County's landscaping requirements.

Bicycle & Pedestrian Accommodations

Comment 3: To help meet the mobility needs of the adjacent residents, staff recommends that the applicant commit to a sidewalk on the south side of Road "B" with two additional crosswalks at the Route 659 Relocated/Road "B" intersection and one additional crosswalk at the north-south internal road/Road "B" intersection.

Staff recommends two additional sidewalk connections in the following locations:

- **Along the driveway adjacent to the discus field, which would allow people to safely walk from the high school to the stadium; and**
- **From the 10-foot multi-use trail serving the Westport development to the sidewalk/crosswalk near the front of the elementary school.**

Response: LCPS and Parks and Recreation have reviewed the plan again and the recommended sidewalk on the south side of Road B has been added along with the additional crosswalks. The additional sidewalk connections along the driveway at the discus field and between the Westport trail and elementary school have been added as recommended.

Lighting & Signage

Comment 4: Staff recommends that the applicant's commitments be supplemented to address the following:

- **Reflector technology systems for athletic field lighting and the times that these lights will be turned off; and**
- **Maximum heights for lighting fixtures and athletic field light poles.**

Response: The proposed athletic field lighting will include internal reflectors in addition to being cut-off, fully shielded and directed downward and inward to the site. In prior high school special exception conditions, athletic field lighting has been required to be turned off within one hour following the end of evening activities, or by 11 p.m., whichever occurs first. In addition,

the light poles for athletic fields have been required to not exceed 80 feet in height, with height to be measured from the ground to the bottom of the light fixture. These conditions are acceptable to LCPS although it is noted that the height restriction can increase cost by requiring more poles/lighting fixtures in order to supply the appropriate athletic field lighting.

Office of Transportation Services

Comments dated July 13, 2010

Comment 1: In the Statement of Justification, the Applicant indicates that it will construct a half-section (two lanes) of Northstar Boulevard (Route 659 Relocated) between Tall Cedars Parkway and Braddock Road and pave a half-section (two lanes) of Braddock Road from the end of the existing pavement (in the vicinity of Great Berkhamstead Drive (the entrance to the Stratshire Crossing (Braddock Crossing) development) west to Northstar Boulevard and Goshen Road. These improvements are proposed to be in place prior to the opening of the proposed high school, if not already constructed by others. These road improvements necessary to access the school site and are recommended to be included in the future proffers and conditions associated with these applications.

Response: It is proposed to have two lanes of Northstar Boulevard between Tall Cedars Parkway and Braddock Road in place and to extend Braddock Road from the end of the existing pavement to Northstar Boulevard prior to the opening of the high school. (Braddock Road would be extended such that it provides an appropriate connection to Northstar Boulevard and allows proper transition. The construction plans and profiles for Braddock Crossing's first phase takes Braddock up to Northstar Boulevard. If Braddock Crossing has not extended Braddock Road for their second phase (across Northstar Boulevard and out to Goshen Road, then LCPS would provide improvement at the intersection of Northstar Boulevard and Braddock Road to ensure the tie in to Braddock Road with appropriate transitions). The extension of Braddock Road between Northstar Boulevard and Goshen Road would appropriately be the responsibility of the developer of Braddock Crossing in accord with that project's proffer requirements.

Comment 2: There are existing proffered commitments from the Stone Ridge, C.D. Smith, and Braddock Crossing developments to construct the Northstar Boulevard and Braddock Road improvements described in Comment 1 above. The Applicant indicates that at such time as the surrounding properties (Stone Ridge, C.D. Smith, and Braddock Crossing) reach the development thresholds that would have required the construction of these improvements, the cash-in-lieu of construction clauses in the respective proffers statements would be triggered. This should be verified by appropriate County staff.

Response: This comment is addressed to County staff. However, it may be helpful to have copies of letters prepared by the Zoning Staff in December of 2009 which sought early right-of-way dedication from the C.D. Smith and Braddock Crossing developments and further

addressed the cash-in-lieu of construction. With regard to the Stone Ridge portion of Northstar Boulevard, Stone Ridge will construct the eastern two lanes of Northstar Boulevard between Tall Cedars Parkway and the southern boundary of Stone Ridge, including the 10 foot in width trail, prior to the issuance of the 1st zoning permit in Land Bay 1. The proposed high school is to be located in Land Bay 1. Stone Ridge is proffered to construct this improvement as a part of the recently approved ZCPA 2006-0003 and ZMAP 2006-0011 applications, reference Proffer II. C. 3., attached for easy reference. Further, as a part of the contract between LCSB and Stone Ridge, there are provisions for Stone Ridge to construct these two lanes, pursuant to Post Closing Development Matters, Paragraph 14 (a) and (b), also attached.

Comment 3: The Applicant should construct the eastbound right turn lane and the southbound left turn lane at the Northstar Boulevard/Braddock Road intersection prior to the opening of the high school in 2012 (these turn lanes are identified in the traffic study as being warranted at that time). The Applicant should seek reimbursement for these improvements to the extent that they have been proffered as part of other developments in the area.

Response: Pursuant to the Staff/Applicant meeting on July 21, 2010, it has been clarified that at the intersection of Northstar Boulevard/Braddock Road, the Applicant should construct the westbound right turn lane (not eastbound) and the southbound left turn lane, prior to the opening of the high school in 2012. (Please see page ix, Future Conditions with Development (High School Build Out - 2010)). Any cash-in-lieu proffered for these improvements by others would be provided to the County. LCPS acknowledges that these two turn lanes improvements will be provided as a part of the high school development.

Comment 4: The Applicant should construct the separate left and right turn lanes on Northstar Boulevard at Road A and Road B (the two entrances to the school site) prior to the opening of the high school in 2012, as recommended by the traffic study.

Response: Acknowledged

Comment 5: Tall Cedars Parkway has been constructed by Stone Ridge west to the vicinity of future Northstar Boulevard. Should any additional construction be necessary to tie this existing roadway to the proposed half-section of Northstar Boulevard described in Comment 1 above, the Applicant should construct such improvements concurrent with the construction of Northstar Boulevard.

Response: Acknowledged.

Comment 6: If not already constructed by others prior to the opening of the high school in 2012, the Applicant should construct the turn lanes recommended by the traffic study at the Gum Spring Road/Braddock Road intersection. Any necessary modifications to the existing traffic signal at this intersection should also be the responsibility of the Applicant if such modifications have not already been made by others. The Applicant should seek

reimbursement for these improvements/modifications to the extent that they have been proffered as part of other developments in the area.

Response: As discussed in our July 21, 2010 meeting, the traffic study accounted for traffic generated by planned developments in the vicinity of the proposed schools. Hence, as traffic from the planned developments was accounted for, similarly the proffered roadway improvements by these planned developments were also assumed to be in place for the analysis years. As outlined below, the following improvements, which are not in place, were identified in the traffic study under the high school opening year (2012) at the intersection of Gum Spring Road/Braddock Road:

- Separate Left Turn Lane on Braddock Road EB (to NB 659) – Proffered by *Kirkpatrick Farms and Seven Hills*
- Separate Left Turn Lane on Braddock Road WB (to SB 659) - Proffered by *Seven Hills*
- Upgrade Right Turn Lane on Braddock Road EB (to SB 659) to meet VDOT Standards - Proffered by *Kirkpatrick Farms*

As stated above, the traffic study incorporates trips generated by the developments that have proffered to provide these improvements. However, if the trips generated by the background developments in the area are eliminated from the analysis, and an analysis of the intersection is conducted utilizing the existing traffic, the inherent growth (regional traffic increase) and the trips generated by the schools, the improvements listed above are not required. The technical memorandum confirming this finding, prepared by Gorove/Slade Associates dated July 22, 2010, is included for staff consideration. Based on this memorandum, LCPS asks that the intersection improvements (outlined above) be appropriately provided by those developments that have proffered these improvements as these improvements are not needed to facilitate safe and adequate access to the proposed schools.

Comment 7: The Applicant has submitted a request to the Board of Supervisors to abandon the segment of Goshen Road (Route 616) from Road A south to Braddock Road in order to facilitate the development of the proposed high school and elementary school. OTS has received comments from various referral agencies regarding this proposed abandonment; these comments and the Applicant's responses (dated June 8, 2010) are provided as *Attachment 42*. Of particular note is the comment from VDOT indicating that the abandonment cannot take place until the replacement section of roadway (Route 659 Relocated (Northstar Boulevard)) has been constructed and is accepted into the VDOT secondary system for maintenance. Further, OTS notes that VDOT does not accept half-sections of roadways (as is being proposed) for maintenance without a commitment from the County assuring the completion of the remaining half-section. These matters have the potential to delay the development of the proposed schools. Coordination and resolution of these matters with VDOT needs to occur in a timely manner, and all issues identified in the abandonment referral comments need to be resolved prior to the abandonment request moving forward for consideration by the Board of Supervisors.

Response: At the Staff/Applicant meeting on July 21, 2010, it was agreed that a meeting should be held with appropriate County and VDOT staff to review the abandonment process and the acceptance of two lanes of Relocated Route 659 (Northstar Boulevard). We appreciate staff's assistance in the quick resolution of these concerns.

Comment 8: Further discussion is recommended with the Applicant and VDOT regarding Goshen Road north of the site. The potential of cutting off site access from Goshen Road at the northern site boundary should be explored in order to limit additional vehicle trips on this substandard facility.

Response: Access to the school facilities from Road A (at Goshen Road) is limited to the bus loop and teacher parking. LCPS is willing to restrict school bus usage of Goshen Road to only the bus(es) that would pick-up and drop-off students residing along Goshen Road unless traffic conditions, such as an emergency, otherwise warrant use of the unpaved section. Further, LCPS is willing to advise teachers to avoid use of Goshen Road. These measures would reduce potential traffic on Goshen Road.

Comment 9: The plan set (Sheet 5) depicts an extensive pedestrian network for the proposed high school and elementary school. This network includes pedestrian trails to the south and west connecting to the Westport development, and to the north connecting to a portion of the Stone Ridge development. Commitments to construct the pedestrian network as shown on Sheet 5 should be included with these applications, including extensions of trails to logical termini within Westport and Stone Ridge when those developments are constructed. The proffered trail on the east side of Northstar Boulevard should be in place prior to the opening of the high school in 2012.

Response: LCPS will implement the pedestrian network planned for the proposed school facilities as development occurs, as depicted on Sheet 5 of the SPEX plat. LCPS has been coordinating with Stone Ridge and Westport to determine the appropriate connection points and will build the pedestrian trails to the school boundaries and along proposed roadways. A portion of the school site is within Stone Ridge. Road A and Relocated Route 659/Northstar Boulevard are between the school facilities and the remainder of Stone Ridge. As such, the construction of sidewalks/trails along Road A and Relocated Route 659 will connect to Stone Ridge's proffered pedestrian network. With regard to Westport, it is not known when this project will move forward. It would be costly for LCPS to mobilize equipment in the future (after the school project is complete) to construct these trail extensions. In addition, it would be necessary for LCPS to secure permission and easements on the Westport property in order to construct. LCPS will provide the pedestrian trails to the property boundaries for future connection by others. The trail on the east side of Northstar Boulevard will be constructed in conjunction of the two lanes of Northstar Boulevard and will be in place prior to the opening of the high school in 2010.

Comment 10: The Statement of Justification (Page 11) notes that all-way stop conditions (stop signs or traffic signals), crosswalks, and crossing guards are necessary to support walk zones to the proposed schools across Northstar Boulevard at both Road A and Road B. OTS notes that the referenced stop signs and crosswalks will require VDOT review and approval, and the Applicant should be responsible for providing appropriate warrant studies for the proposed all-way stop conditions on Northstar Boulevard at both Road A and Road B. Additionally, the Applicant should commit to the installation of traffic signals on Northstar Boulevard at Road A and Road B at such time as signals are warranted by the County or VDOT.

Response: LCPS will provide appropriate warrant studies as required for the proposed all-way stop control for Roads A and B. Based on the analysis presented in the traffic study, a signal will not be warranted at the intersection of Road A and Road B with Northstar Boulevard under the High School (2012) and Elementary School (2015) opening years. As discussed with and agreed to by the OTS staff at the meeting held on July 21, 2010, signal warrant studies will not be conducted at Road A and Road B. This decision is based on 1) the uncertainty as to when Northstar Boulevard will be extended between Tall Cedars Parkway and Route 50, 2) there are no existing proffers to construct this extension, 3) these signals, if warranted in the future, would primarily be due to regional traffic not the school traffic, 4) the school traffic peak hours are different from the commuter peak hours and 5) the appropriate timing for the signal analysis will likely be well beyond the full build out of the proposed schools (year 2020+).

Comment 11: While not included in the scoping agreement, a significant percentage of high school site-generated traffic is anticipated by the traffic study to go through the Stone Springs Boulevard/Tall Cedars Parkway intersection. According to the June 2009 traffic study for the Stone Ridge Commercial rezoning (ZMAP 2006-0011), certain movements at this intersection are forecast to operate at failing LOS (LOS E or F) by 2015 even without the proposed schools in place. The Applicant should analyze this intersection and identify and commit to necessary mitigation measures to maintain/restore acceptable LOS (LOS D or better) at this intersection.

Response: The requested analysis of the Stone Springs Boulevard and Tall Cedars Parkway intersection has been conducted and is presented in the traffic memorandum prepared by Gorove/Slade Associates dated July 22, 2010. The analysis reveals that the intersection will operate at acceptable levels of service for the High School peak hour (2012) and Elementary School peak hour (2015) as an unsignalized (all-way stop control) intersection.

Virginia Department of Transportation
Comments dated July 8, 2010

Comment 1: Please provide draft proffers for review.

Response: Because of the limited scope of the rezoning (3 acres of land from PD-GI to TR-1), LCPS is not proposing proffers. LCPS is working with the County on Special Exception conditions which will be provided to VDOT as soon as they are available.

Comment 2: Please label all the applicable roads on the plan as they are designated in the Loudoun *Countywide Transportation Plan (CTP)* or as they are referenced in the TIS, e.g. "Route 659 Relocated" is also referred to as "Northstar Boulevard".

Response: The recommended labeling has been added to the SPEX Plat.

Comment 3: Provide typical sections for Roads "A" and "B" compliant with the applicable VDOT standard. Reference the standard used and include street width, design speed and projected traffic volume.

Response: The typical sections for Roads A and B have been added to the SPEX Plat as requested.

Comment 4: Goshen Road, Route 616 is not to be abandoned until an adequate replacement facility is in place.

Response: Acknowledged. Consistent with discussions with VDOT and as outlined in the application, it is planned to barricade Goshen Road south of the new cul-de-sac on Goshen Road at Road A, north of the parent drop off/student parking lot, and just north of Braddock Road until such time as the abandonment is officially approved. Please note that a meeting is being scheduled with the County and VDOT to further review the abandonment process and the acceptance of the two lane Northstar Boulevard.

Comment 5: Related to comment # 4: Please see the attached e-mail dated Monday, March 29, 2010 from James C. Zeller, P. E. of VDOT's Leesburg Residency office.

Response: The 3/29/10 email from Mr. Zeller notes that the proposed two lanes of Relocated Route 659 (Northstar Blvd.) must be accepted into the state system for maintenance before the Goshen Road right of way can be abandoned and that the portion of Relocated Route 659 to be constructed with this project is a part of the adopted Location of the Tri-County Parkway (VDOT Project R000-96A-102 P101, UPC 52405). Design and construction will need to be coordinated with the major design elements of the Tri-County Parkway Location Study. Contact information is provided for VDOT's project manager, Mr. Nick Nies.

LCPS understands that Relocated Route 659 must be accepted into the state system for maintenance in order for the identified section of Goshen Road to be abandoned. (Also reference Comment Response #4 above). In addition, LCPS consultants, Urban engineering, have coordinated with Mr. Nick Nies and the construction plans and profiles are consistent with the VDOT alignment and design.

Comment 6: The cul-de-sac bulb at the northern end of the project is to have sufficient throat length per VDOT standards.

Response: Acknowledged.

Comment 7: This application appears to rely significantly upon proffered roadway improvements "By Others". To ensure an adequate roadway network, we recommend that the portion of the Statement of Justification (dated March 18, 2010) entitled "Summary of Related Road Improvement Proffers" and the "Conclusions" portion of the TIS dated March 8, 2010 be analyzed, merged and presented in an orderly fashion and incorporated into the proffers/approval conditions for this application. (This is related to Comment # 1 above). There should be a mechanism to ensure that any pertinent roadway proffers "By Others" are in place prior to the proposed school opening date. Receipt of this information may generate additional comments.

Response: Acknowledged. It is the intent of LCPS to construct the road improvements required to provide access to the school site if such improvements have not been constructed by others. LCPS anticipates SPEX conditions to this effect. County staff will be preparing recommended special exception conditions that identify the specific road improvement requirements.

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GOROVE/SLADE ASSOCIATES, INC.
3914 Centreville Road / Suite 330 / Chantilly, VA 20151
Phone: 703-787-9595
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MEMORANDUM

TO: George Phillips — Loudoun County
Lou Mosurak — Loudoun County
Marchant Schneider — Loudoun County

FROM: Anushree Goradia
Tushar Awar, P.E.
Christopher Tacinelli, P.E.

DATE: July 22, 2010

SUBJECT: Dulles South High School (HS-7) and Elementary School (ZMAP 2010-0001 and SPEX 2010-003) – Supplemental Analysis: Response to OTS Comments

INTRODUCTION

The Office of Transportation Services (OTS) reviewed the traffic study prepared for this application dated March 8, 2010. OTS staff also reviewed the revised version of the traffic study June 9, 2010, which incorporated the School Board's May 2010 adopted attendance zones/catchment areas for the proposed High School. A referral dated July 13, 2010 was issued by OTS.

OTS COMMENT AND RESPONSE

<u>Comment #6 from the OTS referral states –</u> '***If not already constructed by others prior to the opening of the high school in 2012, the Applicant should construct the turn lanes recommended by the traffic study at the Gum Spring Road/Braddock Road intersection. Any necessary modifications to the existing traffic signal at this intersection should also be the responsibility of the Applicant if such modifications have not already been made by others. The Applicant should seek reimbursement for these improvements/modifications to the extent that they have been proffered as part of other developments in the area.***'

At the meeting held with OTS staff on July 21, 2010, the improvements identified in the traffic study at the intersection of Gum Spring Road/Braddock Road prior to the opening of the high school in 2012 were identified. The following improvements identified in the traffic study at this intersection, although proferred by others, are not in place:

- Separate Left Turn Lane on Braddock Road EB (to NB 659) – Proffered by *Kirkpatrick Farms and Seven Hills*
- Separate Left Turn Lane on Braddock Road WB (to SB 659) - Proffered by *Seven Hills*

- Upgrade Right Turn Lane on Braddock Road EB (to SB 659) to meet VDOT Standards - Proffered by *Kirkpatrick Farms*

At the meeting with OTS staff, it was discussed that as the analysis in the traffic study accounted for traffic generated by the background developments, including the background developments listed above; there is a certain level of ambiguity with respect to the volume/capacity thresholds for these improvements. Hence, an analysis was conducted with the existing traffic, regional growth and the traffic generated by the proposed schools to evaluate exact level of impact from the school traffic at this intersection, without assuming the improvements listed above and without assuming traffic generated by approved developments in the area.

The existing volumes, inherent regional growth rates, and the school traffic distribution were maintained as presented in and consistent with the traffic study, dated June 9, 2010. Table 1 below presents the capacity analysis results.

Table 1: Intersection Capacity Analysis Results – Gum Spring Road/Braddock Road

	AM Peak Hour		PM Peak Hour	
Intersection (Approach/Movement)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Future Conditions with Development (2012) -HS Peak Hour (8-9 AM/3:30-4:30 PM)				
Overall (Signalized)	**D**	**40.3**	**C**	**29.3**
Eastbound Approach	D	48.5	C	30.1
Westbound Approach	D	46.0	C	28.7
Northbound Approach	D	40.4	C	29.5
Southbound Approach	C	26.5	C	29.1
Future Conditions with Development (2015) -HS Peak Hour (8-9 AM/3:30-4:30 PM)				
Overall (Unsignalized – All Way Stop Control)	**D**	**43.2**	**C**	**30.3**
Eastbound Approach	D	52.1	C	31.3
Westbound Approach	D	50.4	C	29.5
Northbound Approach	D	41.8	C	30.3
Southbound Approach	C	28.5	C	30.3

**Note: There is no traffic from the proposed Elementary School anticipated to utilize this intersection.*

Figure 1 on the next page shows the traffic volumes, capacity analysis results and lane configuration assumed for the intersection of Gum Spring Road and Braddock Road. The traffic count sheets and the capacity analysis Synchro worksheets are attached in the Appendix section.

FILE PATH P:/2110/013 LCPS Goshen HS7/CAD
DATE LAST MODIFIED 1/13/10

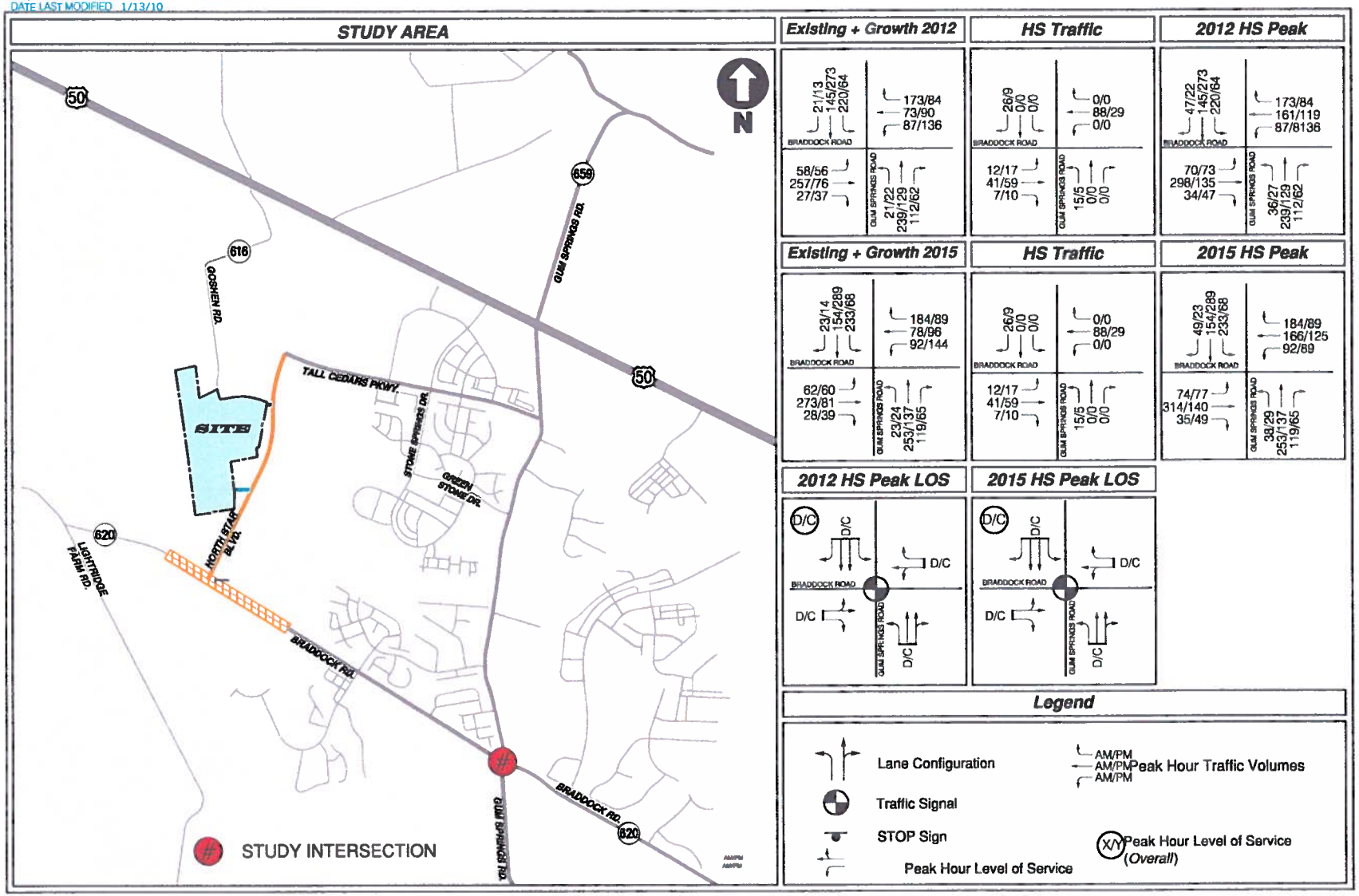


Figure 1
Gum Spring Road and Braddock Road

Comment #11 from the OTS referral states –'*While not included in the scoping agreement, a significant percentage of high school site-generated traffic is anticipated by the traffic study to go through the Stone Springs Boulevard/Tall Cedars Parkway intersection. According to the June 2009 traffic study for the Stone Ridge Commercial rezoning (ZMAP 2006-0011), certain movements at this intersection are forecast to operate at failing LOS (LOS E or F) by 2015 even without the proposed schools in place. The Applicant should analyze the intersection and identify and commit to necessary mitigation measures to maintain/restore acceptable LOS (LOS D or better) at this intersection.*'

In order to address this comment, this memorandum presents the results of the analysis conducted at the intersection of Stone Springs Boulevard/Tall Cedars Parkway under future conditions with development – HS Peak Hour (2012), and future conditions with development – ES Peak Hour (2015. The School Board's adopted catchment area was utilized to evaluate the capacity analysis results. The background traffic generation and distribution was maintained consistent with the June 9, 2010 traffic impact study. Traffic counts were conducted at the intersection of Stone Springs Boulevard and Tall Cedars Parkway on Thursday, November 19, 2009. Table 2 below presents the capacity analysis results.

Table 2: Intersection Capacity Analysis Results – Stone Springs Boulevard and Tall Cedars Parkway

	AM Peak Hour		PM Peak Hour	
Intersection (Approach/Movement)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Existing Conditions (2009) -HS Peak Hour (8-9 AM/3:30-4:30 PM)				
Overall (Unsignalized – All Way Stop Control)	**A**	**7.7**	**A**	**8.0**
Eastbound Approach	A	7.9	A	8.0
Westbound Approach	A	7.4	A	7.8
Northbound Approach	A	7.8	A	8.0
Southbound Approach	A	7.6	A	8.0
Future Conditions with Development (2012) -HS Peak Hour (8-9 AM/3:30-4:30 PM)				
Overall (Unsignalized – All Way Stop Control)	**A**	**8.5**	**A**	**8.4**
Eastbound Approach	A	8.4	A	8.5
Westbound Approach	A	8.2	A	8.0
Northbound Approach	A	9.0	A	8.7
Southbound Approach	A	8.1	A	8.2
Future Conditions with Development (2015) -ES Peak Hour (7-8 AM/2:15-3:15 PM)				
Overall (Unsignalized – All Way Stop Control)	**B**	**11.6**	**A**	**7.8**
Eastbound Approach	B	10.9	A	7.9
Westbound Approach	B	10.2	A	7.5
Northbound Approach	B	13.9	A	7.5
Southbound Approach	B	10.0	A	7.8

Figure 2 on the next page shows the traffic volumes, capacity analysis results and lane configuration for the intersection of Stone Springs Boulevard and Tall Cedars Parkway. The traffic count sheets and the capacity analysis Synchro worksheets are attached in the Appendix section.

FILE PATH: P:/2110/013.LCPS Goshen HS7/CAD
DATE LAST MODIFIED: 1/13/10

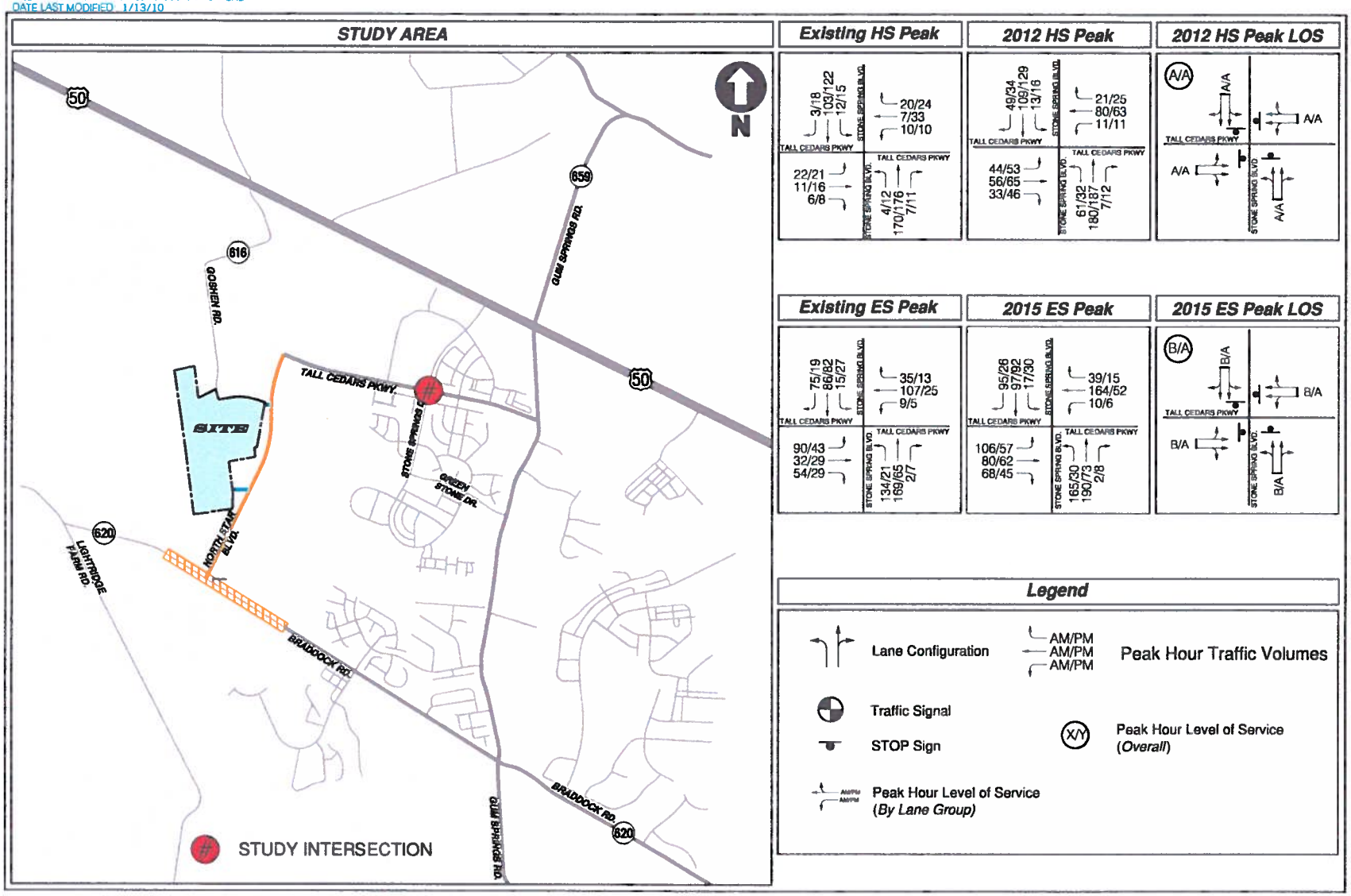


Figure 2
Stone Springs Boulevard and Tall Cedars Parkway

CONCLUSIONS

- A meeting was held with OTS staff to discuss the referral dated July 13, 2010 provided by OTS for the proposed Dulles South High School (HS-7) and Elementary School. This memorandum presents the supplemental analysis as requested in the referral, and discussed at the meeting.
- An analysis was conducted at the intersection of Gum Spring Road and Braddock Road with just the existing traffic, regional growth and the traffic generated by the proposed schools to evaluate the exact level of impact from the school traffic at this intersection. The turn lane improvements proffered by other approved developments in the area and the traffic generated by approved developments in the area was not incorporated.
- The supplemental analysis presented in this memorandum as outlined above for the intersection of Gum Spring Road and Braddock Road shows that the intersection will operate at acceptable levels of service under future conditions (2012 and 2015). Hence, this analysis shows that the minimal addition of school traffic can be accommodated by the improvements that are already in place at this intersection. With the addition of traffic generated by background developments, the turn lane improvements identified in the traffic study are triggered.
- Per OTS staff's request, the intersection of Stone Springs Boulevard and Tall Cedars Parkway was analyzed under future conditions with development (2012 and 2015) scenarios. The capacity analysis results presented in this memorandum show that the intersection operates at acceptable levels of service conditions under existing conditions as an all way stop control intersection and will continue to operate at acceptable level of service conditions under future conditions with the High School (2012) and Elementary School (2015) in place.
- Based on these findings, we conclude that the intersection of Stone Springs Boulevard and Tall Cedars Parkway will operate at acceptable levels of Service under future conditions during the school peak hours.

APPENDIX

APPENDIX A (Response to Comment #6)

GUM SPRING ROAD AND BRADDOCK ROAD: EXISTING TRAFFIC VOLUMES COUNT SHEETS AND INTERSECTION CAPACITY ANALYSIS

Gorove/Slade Associates

Project Name :	HS-7
Project # :	2110-013
Location :	Loudoun County, VA
Data Source:	Gorove/Slade Associates

Intersection:			**Braddock Road at Gum Spring Road**														
AM PEAK																	
Direction:			Southbound				Westbound				Northbound				Eastbound		
Roadway:			**Gum Spring Rd.**				**Braddock Rd.**				**Gum Spring Rd.**				**Braddock Rd.**		
Movement:			Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM	to	6:15 AM	3	20	10	0	13	4	7	0	31	62	0	0	0	18	14	2
6:15 AM	to	6:30 AM	1	25	10	0	4	7	8	0	43	63	1	0	0	17	5	0
6:30 AM	to	6:45 AM	6	32	27	0	12	5	10	0	50	89	7	0	6	29	9	0
6:45 AM	to	7:00 AM	9	34	33	0	9	7	9	0	47	79	5	0	4	28	20	1
7:00 AM	to	7:15 AM	6	32	42	0	11	18	11	0	43	67	12	0	2	34	13	0
7:15 AM	to	7:30 AM	9	25	50	0	24	27	17	0	42	52	6	0	6	69	14	0
7:30 AM	to	7:45 AM	3	35	51	0	24	25	19	0	14	69	8	0	6	54	22	0
7:45 AM	to	8:00 AM	8	28	39	0	31	15	17	0	36	70	7	0	4	61	9	1
8:00 AM	to	8:15 AM	3	29	50	0	51	17	14	0	28	68	6	0	8	54	13	0
8:15 AM	to	8:30 AM	4	27	63	0	59	13	18	0	28	57	2	0	5	64	16	0
8:30 AM	to	8:45 AM	6	37	51	0	29	13	35	0	18	50	6	0	8	66	15	0
8:45 AM	to	9:00 AM	7	44	43	0	24	26	15	0	32	50	6	0	4	58	11	0
9:00 AM	to	9:15 AM	3	28	13	0	24	21	19	1	27	48	6	0	4	23	14	0
9:15 AM	to	9:30 AM	4	26	15	0	14	14	12	0	21	28	3	0	4	25	6	0
9:30 AM	to	9:45 AM																
9:45 AM	to	10:00 AM																
10:00 AM	to	10:15 AM																
10:15 AM	to	10:30 AM																
10:30 AM	to	10:45 AM																
10:45 AM	to	11:00 AM																

COMMUTER PEAK HOUR																	
Direction:			Southbound				Westbound				Northbound				Eastbound		
Roadway:			**Gum Spring Rd.**				**Braddock Rd.**				**Gum Spring Rd.**				**Braddock Rd.**		
Movement:			Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR																	
7:45 AM	to	8:45 AM	23	117	190	0	130	84	67	0	120	259	27	0	24	238	58	1
AM SYSTEM PEAK HOUR																	
7:30 AM	to	8:30 AM	18	119	203	0	165	70	68	0	106	264	23	0	23	233	60	1

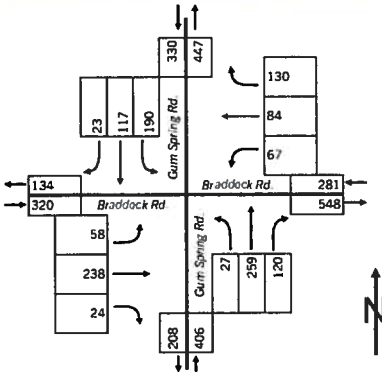
PEAK HOUR			Southbound				Westbound				Northbound				Eastbound		
FACTORS			**Gum Spring Rd.**				**Braddock Rd.**				**Gum Spring Rd.**				**Braddock Rd.**		
			Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM PEAK HOUR			0.72	0.79	0.75	N/A	0.55	1.24	0.48	N/A	0.83	0.93	0.96	N/A	0.75	0.90	0.91	N/A

SCHOOL PEAK HOUR																	
Direction:			Southbound				Westbound				Northbound				Eastbound		
Roadway:			**Gum Spring Rd.**				**Braddock Rd.**				**Gum Spring Rd.**				**Braddock Rd.**		
Movement:			Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
ES AM SCHOOL PEAK HOUR																	
7:00 AM	to	8:00 AM	26	120	182	0	90	85	64	0	135	258	33	0	18	218	58	1
HS AM SCHOOL PEAK HOUR																	
8:00 AM	to	9:00 AM	20	137	207	0	163	69	82	0	106	225	20	0	25	242	55	0

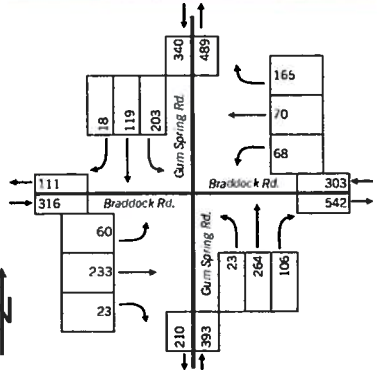
PEAK HOUR			Southbound				Westbound				Northbound				Eastbound		
FACTORS			**Gum Spring Rd.**				**Braddock Rd.**				**Gum Spring Rd.**				**Braddock Rd.**		
			Right	Thru	Left	**Approach**	Right	Thru	Left	**Approach**	Right	Thru	Left	**Approach**	Right	Thru	Left	**Approach**
ES AM SCHOOL PEAK HOUR																	
7:00 AM	to	8:00 AM	0.72	0.86	0.89	**0.92**	0.73	0.79	0.84	**0.88**	0.78	0.92	0.69	**0.87**	0.75	0.79	0.66	**0.83**
HS AM SCHOOL PEAK HOUR																		
8:00 AM	to	9:00 AM	0.71	0.78	0.82	**0.97**	0.69	0.66	0.59	**0.87**	0.83	0.83	0.83	**0.86**	0.78	0.92	0.86	**0.90**

Date of Counts: Thursday, November 19, 2009
Weather Conditions: Light Rain

AM INTERSECTION PEAK VOLUMES



AM SYSTEM PEAK VOLUMES



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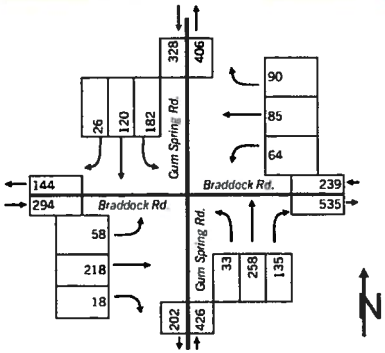
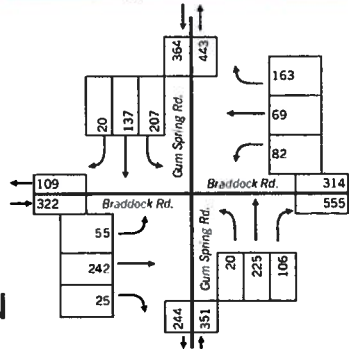


HS AM PEAK HOUR VOLUMES



Gorove/Slade Associates

Project Name	HS-7
Project #	2110-013
Location	Loudoun County, VA
Data Source:	Gorove/Slade Associates

Intersection: Braddock Road at Gum Spring Road

PM PEAK

	Direction:	Southbound				Westbound				Northbound				Eastbound			
	Roadway:	Gum Spring Rd.				Braddock Rd.				Gum Spring Rd.				Braddock Rd.			
	Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
2:00 PM	to 2:15 PM	9	55	15	0	15	13	20	3	10	29	3	0	8	20	12	0
2:15 PM	to 2:30 PM	6	74	18	0	23	18	20	9	11	29	7	0	2	10	8	0
2:30 PM	to 2:45 PM	3	49	11	1	21	33	18	4	13	27	5	0	6	14	14	0
2:45 PM	to 3:00 PM	2	47	13	0	23	38	16	1	10	30	4	0	12	29	19	0
3:00 PM	to 3:15 PM	8	49	9	0	11	18	26	0	11	36	2	0	11	14	9	0
3:15 PM	to 3:30 PM	2	42	8	0	12	16	24	0	15	30	3	0	4	17	17	0
3:30 PM	to 3:45 PM	2	49	17	0	10	18	17	4	12	33	4	0	8	16	16	0
3:45 PM	to 4:00 PM	3	66	22	0	24	22	26	2	15	29	6	0	10	31	11	0
4:00 PM	to 4:15 PM	4	63	17	0	25	24	33	2	17	22	5	0	7	14	13	0
4:15 PM	to 4:30 PM	3	79	4	0	20	21	52	0	14	38	6	0	10	11	13	0
4:30 PM	to 4:45 PM	2	65	19	0	10	22	68	1	18	46	5	0	9	18	5	0
4:45 PM	to 5:00 PM	3	90	5	0	21	49	52	3	17	35	5	0	8	10	3	0
5:00 PM	to 5:15 PM	1	72	13	0	23	34	35	2	15	37	3	0	5	18	5	0
5:15 PM	to 5:30 PM	2	87	16	0	16	31	47	1	19	30	2	0	7	26	6	0
5:30 PM	to 5:45 PM	5	58	42	0	17	20	31	0	23	37	3	0	4	16	2	0
5:45 PM	to 6:00 PM	6	84	17	0	30	58	40	0	15	28	3	0	4	10	4	0
6:00 PM	to 6:15 PM	3	45	13	0	20	28	32	8	19	33	5	0	5	17	16	0
6:15 PM	to 6:30 PM	1	46	16	0	29	30	38	16	12	17	6	0	4	19	5	0
6:30 PM	to 6:45 PM	6	85	17	0	35	50	47	0	14	16	3	0	2	15	8	0
6:45 PM	to 7:00 PM	5	40	12	0	24	27	25	6	11	21	1	0	0	22	4	0

COMMUTER PEAK HOUR

	Direction:	Southbound				Westbound				Northbound				Eastbound			
	Roadway:	Gum Spring Rd.				Braddock Rd.				Gum Spring Rd.				Braddock Rd.			
	Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
PM INTERSECTION PEAK HOUR																	
4:30 PM	to 5:30 PM	8	314	53	0	70	136	202	7	69	148	15	0	29	72	19	0
PM SYSTEM PEAK HOUR																	
4:30 PM	to 5:30 PM	8	314	53	0	70	136	202	7	69	148	15	0	29	72	19	0

PEAK HOUR FACTORS

	Southbound				Westbound				Northbound				Eastbound			
	Gum Spring Rd.				Braddock Rd.				Gum Spring Rd.				Braddock Rd.			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
PM PEAK HOUR	0.67	0.87	0.70	N/A	0.76	0.69	0.74	N/A	0.91	0.80	0.75	N/A	0.81	0.69	0.79	N/A

SCHOOL PEAK HOUR

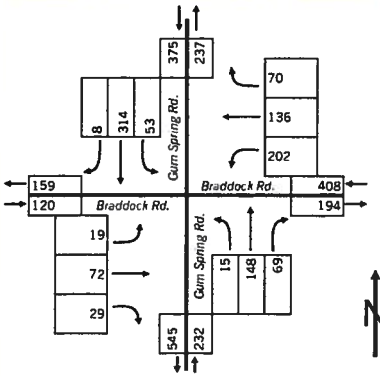
	Direction:	Southbound				Westbound				Northbound				Eastbound			
	Roadway:	Gum Spring Rd.				Braddock Rd.				Gum Spring Rd.				Braddock Rd.			
	Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
ES PM SCHOOL PEAK HOUR																	
2:15 PM	to 3:15 PM	19	219	51	1	78	107	80	14	45	122	18	0	31	67	50	0
HS PM SCHOOL PEAK HOUR																	
3:30 PM	to 4:30 PM	12	257	60	0	79	85	128	8	58	122	21	0	35	72	53	0

PEAK HOUR FACTORS

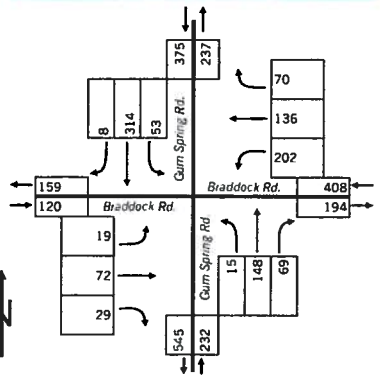
	Southbound				Westbound				Northbound				Eastbound			
	Gum Spring Rd.				Braddock Rd.				Gum Spring Rd.				Braddock Rd.			
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
ES PM SCHOOL PEAK HOUR																
2:15 PM	to 3:15 PM	0.59	0.74	0.71	0.74	0.85	0.70	0.77	0.86	0.87	0.85	0.64	0.94	0.65	0.58	0.66	0.62
HS PM SCHOOL PEAK HOUR																
3:30 PM	to 4:30 PM	0.75	0.81	0.68	0.90	0.79	0.89	0.62	0.78	0.85	0.80	0.88	0.87	0.88	0.58	0.83	0.77

Date of Counts: Thursday, November 19, 2009
Weather Conditions: Light Rain

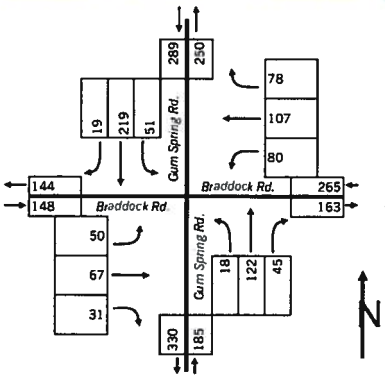
PM INTERSECTION PEAK VOLUMES



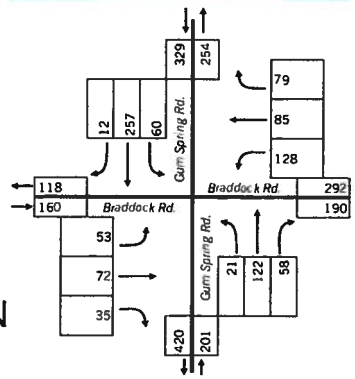
PM SYSTEM PEAK VOLUMES



ES PM PEAK HOUR VOLUMES



HS PM PEAK HOUR VOLUMES



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	298	34	87	161	173	36	239	112	220	145	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected		0.99	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1845	1583		1831	1583	1770	3370		1770	3539	1583
Flt Permitted		0.99	1.00		0.98	1.00	0.65	1.00		0.29	1.00	1.00
Satd. Flow (perm)		1845	1583		1831	1583	1214	3370		536	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	324	37	95	175	188	39	260	122	239	158	51
RTOR Reduction (vph)	0	0	10	0	0	130	0	51	0	0	0	24
Lane Group Flow (vph)	0	400	27	0	270	58	39	331	0	239	158	27
Turn Type	Split		pm+ov	Split		pm+ov	pm+pt			pm+pt		pm+ov
Protected Phases	4	4	5	8	8	1	5	2		1	6	4
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)		25.5	28.6		17.4	31.0	19.6	16.5		37.1	27.0	52.5
Effective Green, g (s)		25.5	28.6		17.4	31.0	19.6	16.5		37.1	27.0	52.5
Actuated g/C Ratio		0.25	0.28		0.17	0.31	0.19	0.16		0.37	0.27	0.52
Clearance Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		466	448		315	596	253	551		363	946	933
v/s Ratio Prot		c0.22	0.00		c0.15	0.01	0.00	0.10		c0.09	0.04	0.01
v/s Ratio Perm			0.02			0.02	0.03			c0.15		0.01
v/c Ratio		0.86	0.06		0.86	0.10	0.15	0.60		0.66	0.17	0.03
Uniform Delay, d1		36.0	26.4		40.6	25.0	33.5	39.2		24.1	28.4	11.8
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		14.5	0.1		19.9	0.1	0.3	1.8		4.3	0.1	0.0
Delay (s)		50.5	26.5		60.5	25.1	33.8	41.0		28.4	28.5	11.8
Level of Service		D	C		E	C	C	D		C	C	B
Approach Delay (s)		48.5			46.0			40.4			26.5	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	40.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	135	47	136	119	84	27	129	62	64	273	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected		0.98	1.00		0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1831	1583		1814	1583	1770	3367		1770	3539	1583
Flt Permitted		0.98	1.00		0.97	1.00	0.57	1.00		0.58	1.00	1.00
Satd. Flow (perm)		1831	1583		1814	1583	1063	3367		1085	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	147	51	148	129	91	29	140	67	70	297	24
RTOR Reduction (vph)	0	0	25	0	0	64	0	55	0	0	0	15
Lane Group Flow (vph)	0	226	26	0	277	27	29	152	0	70	297	9
Turn Type	Split		pm+ov	Split		pm+ov	pm+pt			pm+pt		pm+ov
Protected Phases	4	4	5	8	8	1	5	2		1	6	4
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)		15.7	20.1		18.0	23.2	16.2	11.8		17.8	12.6	28.3
Effective Green, g (s)		15.7	20.1		18.0	23.2	16.2	11.8		17.8	12.6	28.3
Actuated g/C Ratio		0.20	0.26		0.23	0.29	0.21	0.15		0.23	0.16	0.36
Clearance Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		365	404		415	607	258	505		291	567	710
v/s Ratio Prot		c0.12	0.00		c0.15	0.00	0.01	0.05		c0.02	c0.08	0.00
v/s Ratio Perm			0.01			0.01	0.02			0.04		0.00
v/c Ratio		0.62	0.07		0.67	0.04	0.11	0.30		0.24	0.52	0.01
Uniform Delay, d1		28.8	22.2		27.6	19.8	25.2	29.8		24.5	30.3	16.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.1	0.1		4.0	0.0	0.2	0.3		0.4	0.9	0.0
Delay (s)		31.9	22.3		31.7	19.9	25.4	30.1		25.0	31.2	16.2
Level of Service		C	C		C	B	C	C		C	C	B
Approach Delay (s)		30.1			28.7			29.5			29.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	78.7	Sum of lost time (s)	21.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	314	35	92	166	184	38	253	119	233	154	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected		0.99	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1845	1583		1830	1583	1770	3370		1770	3539	1583
Flt Permitted		0.99	1.00		0.98	1.00	0.65	1.00		0.27	1.00	1.00
Satd. Flow (perm)		1845	1583		1830	1583	1204	3370		500	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	341	38	100	180	200	41	275	129	253	167	53
RTOR Reduction (vph)	0	0	10	0	0	139	0	51	0	0	0	25
Lane Group Flow (vph)	0	421	28	0	280	61	41	353	0	253	167	28
Turn Type	Split		pm+ov	Split		pm+ov	pm+pt			pm+pt		pm+ov
Protected Phases	4	4	5	8	8	1	5	2		1	6	4
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)		26.7	29.8		17.7	31.6	20.3	17.2		38.1	28.0	54.7
Effective Green, g (s)		26.7	29.8		17.7	31.6	20.3	17.2		38.1	28.0	54.7
Actuated g/C Ratio		0.26	0.29		0.17	0.31	0.20	0.17		0.37	0.27	0.53
Clearance Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		476	456		313	590	253	560		355	957	944
v/s Ratio Prot		c0.23	0.00		c0.15	0.01	0.00	0.10		c0.10	0.05	0.01
v/s Ratio Perm			0.02			0.02	0.03			c0.17		0.01
v/c Ratio		0.88	0.06		0.89	0.10	0.16	0.63		0.71	0.17	0.03
Uniform Delay, d1		36.9	26.7		42.0	25.8	34.2	40.2		25.0	28.9	11.7
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		17.5	0.1		26.0	0.1	0.3	2.3		6.6	0.1	0.0
Delay (s)		54.4	26.8		68.0	25.9	34.5	42.5		31.6	29.0	11.7
Level of Service		D	C		E	C	C	D		C	C	B
Approach Delay (s)		52.1			50.4			41.8			28.5	
Approach LOS		D			D			D			C	

Intersection Summary				
HCM Average Control Delay	43.2	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.78			
Actuated Cycle Length (s)	103.5	Sum of lost time (s)	21.0	
Intersection Capacity Utilization	81.5%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	140	49	144	125	89	29	137	65	68	289	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected		0.98	1.00		0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1830	1583		1814	1583	1770	3368		1770	3539	1583
Flt Permitted		0.98	1.00		0.97	1.00	0.56	1.00		0.58	1.00	1.00
Satd. Flow (perm)		1830	1583		1814	1583	1045	3368		1083	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	152	53	157	136	97	32	149	71	74	314	25
RTOR Reduction (vph)	0	0	25	0	0	68	0	54	0	0	0	16
Lane Group Flow (vph)	0	236	28	0	293	29	32	166	0	74	314	9
Turn Type	Split		pm+ov	Split		pm+ov	pm+pt			pm+pt		pm+ov
Protected Phases	4	4	5	8	8	1	5	2		1	6	4
Permitted Phases			4			8	2			6		6
Actuated Green, G (s)		16.3	20.8		19.1	24.3	16.8	12.3		18.2	13.0	29.3
Effective Green, g (s)		16.3	20.8		19.1	24.3	16.8	12.3		18.2	13.0	29.3
Actuated g/C Ratio		0.20	0.26		0.24	0.30	0.21	0.15		0.22	0.16	0.36
Clearance Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		369	407		428	612	257	512		288	569	710
v/s Ratio Prot		c0.13	0.00		c0.16	0.00	0.01	0.05		c0.02	c0.09	0.00
v/s Ratio Perm			0.01			0.02	0.02			0.04		0.00
v/c Ratio		0.64	0.07		0.68	0.05	0.12	0.32		0.26	0.55	0.01
Uniform Delay, d1		29.6	22.7		28.2	20.1	25.9	30.6		25.4	31.3	16.5
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.6	0.1		4.5	0.0	0.2	0.4		0.5	1.2	0.0
Delay (s)		33.2	22.8		32.6	20.1	26.1	31.0		25.8	32.4	16.5
Level of Service		C	C		C	C	C	C		C	C	B
Approach Delay (s)		31.3			29.5			30.3			30.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	80.9	Sum of lost time (s)	21.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX B (Response to Comment #11)

TALL CEDARS PARKWAY AND STONE SPRINGS BOULEVARD: EXISTING TRAFFIC VOLUMES COUNT SHEETS AND INTERSECTION CAPACITY ANALYSIS

Gorove/Slade Associates

Project Name:	HS-7
Project #:	2110-013
Location	Loudoun County, VA
Data Source	Gorove/Slade Associates

Date of Counts:	Thursday, November 19, 2009
Weather Conditions:	Light Rain

Intersection: Tall Cedars Parkway at Stone Springs Boulevard

AM PEAK

Direction:	Southbound				Westbound				Northbound				Eastbound			
Roadway:	Stone Springs Blvd.				Tall Cedars Pky.				Stone Springs Blvd.				Tall Cedars Pky.			
Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:00 AM to 6:15 AM	1	3	1	0	2	0	1	0	0	22	1	0	0	4	5	0
6:15 AM to 6:30 AM	1	5	0	2	7	2	0	0	0	23	0	0	1	0	3	0
6:30 AM to 6:45 AM	0	8	2	1	9	4	0	2	2	27	1	0	0	0	4	0
6:45 AM to 7:00 AM	2	22	0	0	12	6	0	0	1	37	2	0	0	2	6	0
7:00 AM to 7:15 AM	9	9	4	3	8	9	0	0	1	38	2	0	0	3	7	0
7:15 AM to 7:30 AM	15	21	6	4	8	22	6	2	0	28	13	0	1	4	3	0
7:30 AM to 7:45 AM	26	24	1	3	8	39	2	3	1	56	64	0	24	15	39	1
7:45 AM to 8:00 AM	25	32	4	2	11	37	1	0	0	47	55	0	29	10	41	0
8:00 AM to 8:15 AM	2	35	5	0	9	3	4	0	0	43	1	0	1	5	4	0
8:15 AM to 8:30 AM	0	36	2	1	4	0	3	0	2	48	1	0	4	2	9	0
8:30 AM to 8:45 AM	1	13	1	0	5	3	3	2	5	51	2	0	0	2	3	0
8:45 AM to 9:00 AM	0	19	4	0	2	1	0	1	0	28	0	0	1	2	6	1
9:00 AM to 9:15 AM	2	11	4	1	6	2	4	1	1	26	2	0	1	1	3	0
9:15 AM to 9:30 AM	1	18	3	0	5	5	1	0	0	23	3	0	1	0	3	0
9:30 AM to 9:45 AM																
9:45 AM to 10:00 AM																
10:00 AM to 10:15 AM																
10:15 AM to 10:30 AM																
10:30 AM to 10:45 AM																
10:45 AM to 11:00 AM																

COMMUTER PEAK HOUR

Direction:	Southbound				Westbound				Northbound				Eastbound			
Roadway:	Stone Springs Blvd.				Tall Cedars Pky.				Stone Springs Blvd.				Tall Cedars Pky.			
Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM INTERSECTION PEAK HOUR																
7:15 AM to 8:15 AM	68	112	16	9	36	101	13	5	1	174	133	0	55	34	87	1
AM SYSTEM PEAK HOUR																
7:30 AM to 8:30 AM	53	127	12	6	32	79	10	3	3	194	121	0	58	32	93	1

PEAK HOUR FACTORS

	Southbound				Westbound				Northbound				Eastbound			
	Stone Springs Blvd.				Tall Cedars Pky.				Stone Springs Blvd.				Tall Cedars Pky.			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
AM PEAK HOUR	0.65	0.80	0.67	N/A	0.82	0.65	0.54	N/A	0.25	0.78	0.52	N/A	0.47	0.57	0.53	N/A

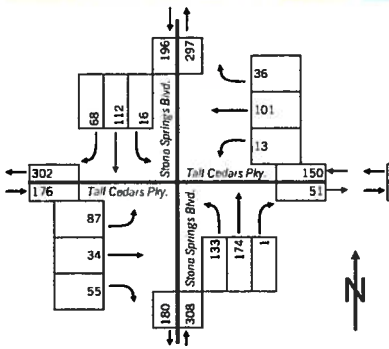
SCHOOL PEAK HOUR

Direction:	Southbound				Westbound				Northbound				Eastbound			
Roadway:	Stone Springs Blvd.				Tall Cedars Pky.				Stone Springs Blvd.				Tall Cedars Pky.			
Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
ES AM SCHOOL PEAK HOUR																
7:00 AM to 8:00 AM	75	86	15	12	35	107	9	5	2	169	134	0	54	32	90	1
HS AM SCHOOL PEAK HOUR																
8:00 AM to 9:00 AM	3	103	12	1	20	7	10	3	7	170	4	0	6	11	22	1

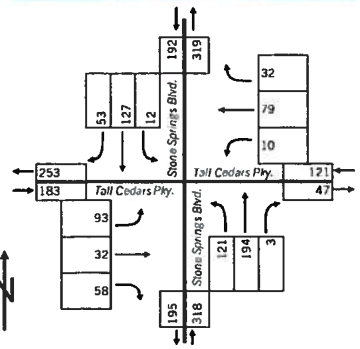
PEAK HOUR FACTORS

	Southbound				Westbound				Northbound				Eastbound			
	Stone Springs Blvd.				Tall Cedars Pky.				Stone Springs Blvd.				Tall Cedars Pky.			
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
ES AM SCHOOL PEAK HOUR																
7:00 AM to 8:00 AM	0.72	0.67	0.63	**0.72**	0.80	0.69	0.38	**0.77**	0.50	0.75	0.52	**0.63**	0.47	0.53	0.55	**0.55**
HS AM SCHOOL PEAK HOUR																
8:00 AM to 9:00 AM	0.38	0.72	0.60	**0.70**	0.56	0.58	0.63	**0.58**	0.35	0.83	0.50	**0.78**	0.38	0.55	0.61	**0.65**

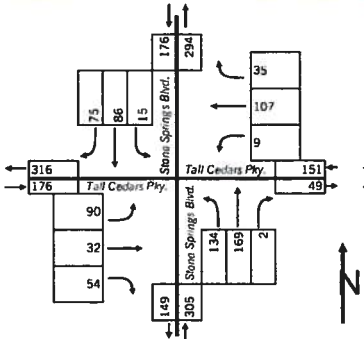
AM INTERSECTION PEAK VOLUMES



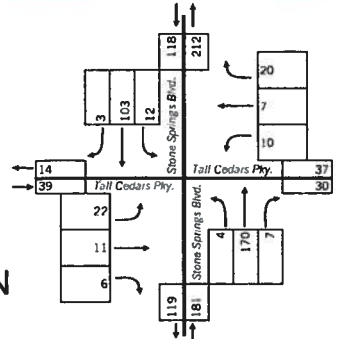
AM SYSTEM PEAK VOLUMES



ES AM PEAK HOUR VOLUMES



HS AM PEAK HOUR VOLUMES



Gorove/Slade Associates

Project Name:	HS 7
Project #:	2110.013
Location	Loudoun County, VA
Data Source:	Gorove/Slade Associates

Intersection: Tall Cedars Parkway at Stone Springs Boulevard

PM PEAK

	Direction:	Southbound				Westbound				Northbound				Eastbound			
	Roadway:	Stone Springs Blvd.				Tall Cedars Pky.				Stone Springs Blvd.				Tall Cedars Pky.			
	Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
2:00 PM	to 2:15 PM	4	15	4	0	7	5	1	0	0	13	3	0	0	3	7	0
2:15 PM	to 2:30 PM	7	14	12	0	7	12	0	0	0	13	9	0	1	2	2	0
2:30 PM	to 2:45 PM	4	17	8	0	1	10	1	0	1	16	7	0	13	8	13	0
2:45 PM	to 3:00 PM	5	27	5	0	3	2	2	0	2	15	5	0	13	16	18	0
3:00 PM	to 3:15 PM	3	24	2	0	2	1	2	0	4	21	0	0	2	3	10	0
3:15 PM	to 3:30 PM	2	23	2	0	5	6	3	0	0	11	4	0	1	2	6	0
3:30 PM	to 3:45 PM	3	21	3	1	2	10	1	0	4	50	5	0	2	2	4	0
3:45 PM	to 4:00 PM	2	28	4	1	6	8	2	0	3	39	2	0	1	2	5	0
4:00 PM	to 4:15 PM	4	26	2	0	4	9	3	0	0	41	3	0	3	4	7	0
4:15 PM	to 4:30 PM	9	47	6	4	12	6	4	1	4	46	2	0	2	8	5	0
4:30 PM	to 4:45 PM	11	58	10	3	11	5	3	0	2	49	0	0	1	9	6	0
4:45 PM	to 5:00 PM	8	52	9	1	15	7	5	2	1	44	1	0	1	5	3	0
5:00 PM	to 5:15 PM	5	42	6	2	6	3	4	0	0	32	3	0	1	4	5	0
5:15 PM	to 5:30 PM	5	35	15	1	6	4	4	3	0	27	1	0	3	1	5	1
5:30 PM	to 5:45 PM	9	48	7	1	13	8	6	0	3	21	0	0	2	2	6	0
5:45 PM	to 6:00 PM	6	52	6	0	8	6	9	1	5	38	4	0	11	3	6	0
6:00 PM	to 6:15 PM	4	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	to 6:30 PM	4	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	to 6:45 PM	5	53	8	2	9	4	1	2	0	16	1	0	0	2	3	0
6:45 PM	to 7:00 PM	7	31	8	0	5	7	2	0	0	21	5	0	1	0	1	0

COMMUTER PEAK HOUR

	Direction:	Southbound				Westbound				Northbound				Eastbound			
	Roadway:	Stone Springs Blvd.				Tall Cedars Pky.				Stone Springs Blvd.				Tall Cedars Pky.			
	Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
PM INTERSECTION PEAK HOUR																	
4:15 PM	to 5:15 PM	33	199	31	10	44	21	16	3	7	171	6	0	5	26	19	0
PM SYSTEM PEAK HOUR																	
4:30 PM	to 5:30 PM	29	187	40	7	38	19	16	5	3	152	5	0	-	19	19	1

PEAK HOUR FACTORS

	Southbound				Westbound				Northbound				Eastbound			
	Stone Springs Blvd.				Tall Cedars Pky.				Stone Springs Blvd.				Tall Cedars Pky.			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
PM PEAK HOUR	0.75	0.86	0.78	N/A	0.73	0.75	0.80	N/A	0.44	0.87	0.50	N/A	0.63	0.72	0.79	N/A

SCHOOL PEAK HOUR

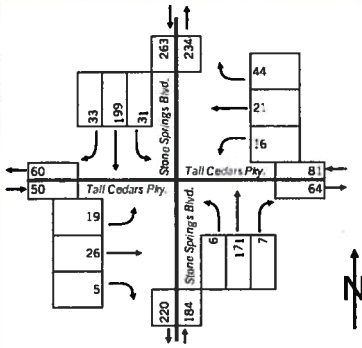
	Direction:	Southbound				Westbound				Northbound				Eastbound			
	Roadway:	Stone Springs Blvd.				Tall Cedars Pky.				Stone Springs Blvd.				Tall Cedars Pky.			
	Movement:	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
ES PM SCHOOL PEAK HOUR																	
2:15 PM	to 3:15 PM	19	82	27	0	13	25	5	0	7	65	21	0	29	29	43	0
HS PM SCHOOL PEAK HOUR																	
3:30 PM	to 4:30 PM	18	122	15	6	24	33	10	1	11	176	12	0	8	16	21	0

PEAK HOUR FACTORS

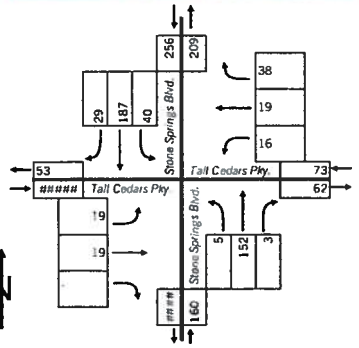
	Southbound				Westbound				Northbound				Eastbound			
	Stone Springs Blvd.				Tall Cedars Pky.				Stone Springs Blvd.				Tall Cedars Pky.			
	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach	Right	Thru	Left	Approach
ES PM SCHOOL PEAK HOUR																
2:15 PM	to 3:15 PM	0.68	0.76	0.56	**0.86**	0.46	0.52	0.63	**0.57**	0.44	0.77	0.58	**0.93**	0.56	0.45	0.60	**0.54**
HS PM SCHOOL PEAK HOUR																
3:30 PM	to 4:30 PM	0.50	0.65	0.63	**0.63**	0.50	0.83	0.63	**0.76**	0.69	0.88	0.60	**0.84**	0.67	0.50	0.75	**0.75**

Date of Counts: Thursday, November 19, 2009
Weather Conditions: Light Rain

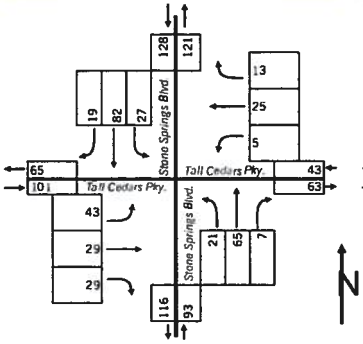
PM INTERSECTION PEAK VOLUMES



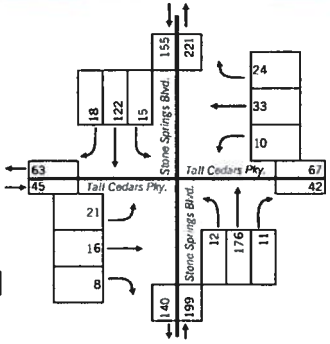
PM SYSTEM PEAK VOLUMES



ES PM INTERSECTION PEAK VOLUMES



HS PM SYSTEM PEAK VOLUMES



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	22	11	6	10	7	20	4	170	7	12	103	3
Peak Hour Factor	0.65	0.65	0.65	0.58	0.58	0.58	0.78	0.78	0.78	0.70	0.70	0.70
Hourly flow rate (vph)	34	17	9	17	12	34	5	218	9	17	147	4

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	42	18	23	41	114	118	91	78
Volume Left (vph)	34	0	17	0	5	0	17	0
Volume Right (vph)	0	9	0	34	0	9	0	4
Hadj (s)	0.43	-0.33	0.40	-0.56	0.06	-0.02	0.13	0.00
Departure Headway (s)	5.9	5.2	5.9	4.9	5.0	5.0	5.2	5.0
Degree Utilization, x	0.07	0.03	0.04	0.06	0.16	0.16	0.13	0.11
Capacity (veh/h)	566	648	569	677	692	702	670	690
Control Delay (s)	8.2	7.1	7.9	7.0	7.8	7.7	7.7	7.4
Approach Delay (s)	7.9		7.4		7.8		7.6	
Approach LOS	A		A		A		A	

Intersection Summary				
Delay	7.7			
HCM Level of Service	A			
Intersection Capacity Utilization	26.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	21	16	8	10	33	24	12	176	11	15	122	18
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.84	0.84	0.84	0.63	0.63	0.63
Hourly flow rate (vph)	28	21	11	13	43	32	14	210	13	24	194	29

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	39	21	35	53	119	118	121	125
Volume Left (vph)	28	0	13	0	14	0	24	0
Volume Right (vph)	0	11	0	32	0	13	0	29
Hadj (s)	0.40	-0.32	0.22	-0.38	0.09	-0.04	0.13	-0.13
Departure Headway (s)	6.1	5.4	5.9	5.3	5.2	5.1	5.3	5.0
Degree Utilization, x	0.07	0.03	0.06	0.08	0.17	0.17	0.18	0.17
Capacity (veh/h)	546	615	565	628	664	681	658	693
Control Delay (s)	8.4	7.4	8.1	7.6	8.1	7.9	8.2	7.9
Approach Delay (s)	8.0		7.8		8.0		8.0	
Approach LOS	A		A		A		A	

Intersection Summary				
Delay	8.0			
HCM Level of Service	A			
Intersection Capacity Utilization	27.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	44	56	33	11	80	21	61	180	7	13	109	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	61	36	12	87	23	66	196	8	14	118	53

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	78	66	55	66	164	105	73	113
Volume Left (vph)	48	0	12	0	66	0	14	0
Volume Right (vph)	0	36	0	23	0	8	0	53
Hadj (s)	0.34	-0.34	0.14	-0.21	0.24	-0.02	0.13	-0.30
Departure Headway (s)	6.1	5.4	6.0	5.6	5.7	5.4	5.7	5.2
Degree Utilization, x	0.13	0.10	0.09	0.10	0.26	0.16	0.12	0.16
Capacity (veh/h)	550	617	563	598	611	635	603	653
Control Delay (s)	8.9	7.8	8.4	8.1	9.4	8.2	8.2	8.0
Approach Delay (s)	8.4		8.2		9.0		8.1	
Approach LOS	A		A		A		A	

Intersection Summary				
Delay	8.5			
HCM Level of Service	A			
Intersection Capacity Utilization	31.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	53	65	46	11	53	25	32	187	12	16	129	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	71	50	12	58	27	35	203	13	17	140	37

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	93	85	41	56	136	115	88	107
Volume Left (vph)	58	0	12	0	35	0	17	0
Volume Right (vph)	0	50	0	27	0	13	0	37
Hadj (s)	0.34	-0.38	0.18	-0.31	0.16	-0.05	0.13	-0.21
Departure Headway (s)	6.1	5.4	6.0	5.5	5.6	5.4	5.7	5.3
Degree Utilization, x	0.16	0.13	0.07	0.09	0.21	0.17	0.14	0.16
Capacity (veh/h)	557	630	557	605	614	635	604	643
Control Delay (s)	9.0	7.9	8.3	7.8	8.9	8.3	8.4	8.1
Approach Delay (s)	8.5		8.0		8.7		8.2	
Approach LOS	A		A		A		A	

Intersection Summary				
Delay	8.4			
HCM Level of Service	A			
Intersection Capacity Utilization	31.2%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	106	80	68	10	164	39	165	190	2	17	97	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	115	87	74	11	178	42	179	207	2	18	105	103

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	159	117	100	132	283	105	71	156
Volume Left (vph)	115	0	11	0	179	0	18	0
Volume Right (vph)	0	74	0	42	0	2	0	103
Hadj (s)	0.40	-0.41	0.09	-0.19	0.35	0.02	0.16	-0.43
Departure Headway (s)	7.0	6.2	6.8	6.5	6.7	6.3	6.8	6.2
Degree Utilization, x	0.31	0.20	0.19	0.24	0.52	0.19	0.13	0.27
Capacity (veh/h)	484	544	496	518	513	540	499	548
Control Delay (s)	11.9	9.6	10.2	10.3	15.6	9.6	9.6	10.2
Approach Delay (s)	10.9		10.2		13.9		10.0	
Approach LOS	B		B		B		B	

Intersection Summary				
Delay	11.6			
HCM Level of Service	B			
Intersection Capacity Utilization	43.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	57	62	45	6	52	15	30	73	8	30	92	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	67	49	7	57	16	33	79	9	33	100	28

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	96	83	35	45	72	48	83	78
Volume Left (vph)	62	0	7	0	33	0	33	0
Volume Right (vph)	0	49	0	16	0	9	0	28
Hadj (s)	0.36	-0.38	0.13	-0.22	0.26	-0.09	0.23	-0.22
Departure Headway (s)	5.7	4.9	5.5	5.2	5.6	5.2	5.5	5.1
Degree Utilization, x	0.15	0.11	0.05	0.06	0.11	0.07	0.13	0.11
Capacity (veh/h)	604	695	613	655	615	653	621	676
Control Delay (s)	8.5	7.3	7.6	7.3	8.1	7.4	8.1	7.5
Approach Delay (s)	7.9		7.5		7.8		7.8	
Approach LOS	A		A		A		A	

Intersection Summary			
Delay	7.8		
HCM Level of Service	A		
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

Loudoun County, Virginia
www.loudoun.gov

Department of Building and Development
Zoning Administration / MSC# 60
1 Harrison Street, S.E., P.O. Box 7000, Leesburg, VA 20177-7000
Administration: 703-777-0397 • Fax: 703-771-5215

December 17, 2009

Marc Chadwick
Winchester Homes, Inc.
6905 Rockledge Drive
Suite 800
Bethesda, MD 20817

Re: Request for ROW Dedication for Route 659 Relocated

Dear Marc:

On behalf of Loudoun County, I am writing to request the dedication of right-of-way for Route 659 Relocated pursuant to the proffers of Braddock Crossing. As a follow up to this letter, you will be contacted by staff from Loudoun County Public Schools. Please ensure that Winchester Homes dedicates the requested right-of-way for Route 659 Relocated.

The Zoning Map Amendment application for Braddock Crossing, ZMAP 2003-0012, was approved by the Board of Supervisors on June 21, 2005, subject to the Proffers dated May 5, 2005 and the Letter of Clarification dated June 14, 2005. Proffer III.B.3 provides for dedication of right-of-way for Route 659 Relocated prior to the 59th residential zoning permit as stated in the proffer text:

> *3. Prior to the issuance of the zoning permit for the 59th residential unit on the Property, the Owner shall dedicate one-hundred twenty (120) feet of right-of-way for Route 659 Relocated as shown on Sheet 6 of the Concept Plan.*

In addition, proffer III.B.7 provides for dedication of right-of-way upon request by the County in advance of development of the property.

> *7. Notwithstanding the above, dedication of right-of-way and easements shall occur upon request of the County in advance of development on the Property if others have prepared construction plans and profiles consistent with the Concept Plan and require dedication to commence construction, and provided the Owner shall not be obligated to incur costs or post bonds with the County in connection with such advance dedication.*

Loudoun County Public Schools (LCPS) is proposing to construct a high school and an elementary school in the Dulles South area on property that is located along Goshen Road, which is west of the future alignment of Route 659 Relocated. The access for the proposed schools would be via Route 659 Relocated. Since it is likely that LCPS will construct the high school before development of Braddock Crossing reaches its triggers for dedication and construction of the right-of-way for Route 659 Relocated, LCPS is planning to construct two lanes of Route 659 Relocated in order to access the school site

At this time, pursuant to Braddock Crossing proffers III.B.3 and III.B.7, the County requests that Winchester Homes dedicate the required right-of-way for Route 659 Relocated as shown on a dedication plat that will be provided to you by Loudoun County Public Schools. As a follow up to this letter, you will receive correspondence from Sara Howard-O'Brien, Land Management Supervisor at Loudoun County Public Schools, which will contain the draft dedication plat and deed for your review. Ms. Howard-O'Brien can be reached via phone at 571-252-1156 and via email at showard@loudoun.k12.va.us.

It is noted that the developer of Braddock Crossing is required to construct, or bond for construction, two lanes of Route 659 Relocated pursuant to proffer III.B.4.

> *4. Prior to the issuance of the zoning permit for the 59th residential unit on the Property, the Owner shall construct or bond for construction two lanes of the ultimate four-lane Route 659 Relocated as shown on Sheet 6 of the Concept Plan.*

In the event that Loudoun County Public Schools constructs the portion of Route 659 Relocated that Braddock Crossing is proffered to construct, Winchester Homes will owe a cash equivalent contribution prior to the issuance of the zoning permit for the 59th residential unit.

> *C.* ***Cash Equivalent Contribution***
>
> *Unless otherwise provided in these Proffers, the Owner agrees to contribute to the County, or its designee, an amount equal to the cost of constructing the transportation improvements described above in Proffers III.B.2. and III.B.4., III.B.5. and III.B.6., in lieu of actual construction, if said improvements have been constructed or bonded for construction by others prior to bonding for construction by the Owner. For the purposes of determining the in-lieu-of contribution, construction costs shall be deemed to include all engineering, surveying, bonding, permit fees, utility relocation, and other hard costs of construction based upon County bonding estimates for said construction per the FSM. Such contribution in lieu of actual construction shall occur at the time the Owner would otherwise have been required by these Proffers to bond or construct such improvements. As determined by the County, such contribution shall either be used to reimburse the party who constructed such improvements or for regional roadway improvements in the vicinity of and for the benefit of the Property.*

According to County records, zoning permits have been issued for 10 residential units. In the event that the LCPS constructs Route 659 Relocated, a separate request for the cash equivalent contribution will be sent to Winchester Homes.

This determination applies solely to the referenced property and is not binding upon the County, the Zoning Administrator or any other official with respect to any other property. No person may rely upon this determination with respect to any property other than the referenced property.

Please be advised that any person aggrieved, or any officer, department or agency of Loudoun County affected by an order, requirement, decision or determination made by an administrative officer in the administration or enforcement of the provisions of the *Zoning Ordinance* may appeal said decision within thirty days to the Board of Supervisors in strict accordance with Section 15.2-2301 of the *Code of Virginia*. This decision is final and unappealable if not appealed within 30 days.

If you have any questions concerning this correspondence, please contact me via email (susan.glass@loudoun.gov) or you may call me at 703-777-0251.

Sincerely,

Susan Glass
Proffer Manager

Cc via email: Dan Schardein, Zoning Administrator
Stevens Miller, Dulles District Supervisor
Sara Howard-O'Brien, Land Management Supervisor, LCPS
Mike Seigfried, Assistant Director for Land Subdivision
Nancy Berfield, Permits Proffer Manager

Loudoun County, Virginia
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Zoning Administration / MSC# 60
1 Harrison Street, S.E., P.O. Box 7000, Leesburg, VA 20177-7000
Administration: 703-777-0397 • Fax: 703-771-5215

December 17, 2009

Chris Rudy
Two Greens/Kirkvest LLC
8614 Westwood Center Drive
Suite 900
Vienna, VA 22182

Re: Request for ROW Dedication for Relocated Route 659

Dear Chris:

On behalf of Loudoun County, I am writing to request the dedication of right-of-way for Relocated Route 659 pursuant to the proffers of C.D. Smith. As a follow up to this letter, you will be contacted by staff from Loudoun County Public Schools. Please ensure that Two Greens/Kirkvest dedicates the requested right-of-way.

The Zoning Map Amendment application for C.D. Smith, ZMAP 2002-0003, was approved by the Board of Supervisors on October 11, 2005, subject to the Proffer Statement dated October 11, 2005. Proffers IV.B.1 provides for dedication and construction of Relocated Route 659 prior to the approval of the first record plat or site plan as stated in the proffer text.

B. ***Construction of Transportation Improvements***

Transportation improvements shall be constructed by the Owner or his successor-in-interest in the following manner:

1. Concurrent with or prior to approval of the first record plat or site plan, whichever is first in time, for the Property, the Owner will:

a. Dedicate right-of-way 120 feet in width through the Property for Relocated Route 659 and construct or bond for construction a half-section of a four lane divided roadway, including turn lanes as required by VDOT, at the site entrance, between the northern Property boundary and the southern Property boundary.

b. Construct or bond for construction a half-section of a four-lane divided roadway, including turn lanes as required by VDOT, from the southernmost Property boundary to Braddock Road (Route 620).

C.D. Smith proffer IV.A provides for advance dedication of right-of-way if others have prepared the construction plans and the Owner is not obligated to incur costs or post bonds in connection with such dedication.

IV. TRANSPORTATION

A. Road Network

Unless otherwise specified in the Proffers, all roads required for access to and within the Property will be constructed in accordance with the County of Loudoun's Land Subdivision and Development Ordinance and the FSM to provide access to the development parcels depicted on the Concept Plan as they are developed. All roads required for access to and within the Property will be designed and constructed in accordance with Virginia Department of Transportation ("VDOT") and County standards, unless modified otherwise. The Owner shall grant a public access easement for emergency vehicles over the private roads developed on the Property concurrently with the development of each section of the Property containing private roads.

The Owner shall dedicate to the County land necessary for construction of public roads which shall include all related easements outside the right-of-way, such as slope, maintenance, storm drainage and utility relocation easements. Dedication of right-of-way and easements shall occur either concurrently with development of each section of the Property or upon request by the County in advance of development on the Property by the Owner if: (1) others have prepared construction plans and profiles consistent with the Concept Plan that require dedication to commence construction; and (2) provided the Owner shall not be obligated to incur costs or post bonds with the County in connection with such dedication.

Loudoun County Public Schools (LCPS) is proposing to construct a high school and an elementary school in the Dulles South area on property that is located along Goshen Road, which is west of the future alignment of Relocated Route 659. The access for the proposed schools would be via Relocated Route 659. Since it is likely that LCPS will construct the high school before development of C.D. Smith reaches the triggers for dedication and construction of the right-of-way for Relocated Route 659, LCPS is planning to construct two lanes of Relocated Route 659 in order to access the School site.

At this time, pursuant to C.D. Smith proffers IV.A and IV.B.1, the County requests that Two Greens/Kirkvest dedicate the required right-of-way for Relocated Route 659 as shown on a dedication plat that will be provided to you by Loudoun County Public Schools. As a follow up to this letter, you will receive correspondence from Sara Howard-O'Brien, Land Management Supervisor at Loudoun County Public Schools, which will contain the draft dedication plat and deed for your review. Ms. Howard-O'Brien can be reached via phone at 571-252-1156 and via email at showard@loudoun.k12.va.us.

It is noted that proffer IV.B.1.b requires the Owner of the C.D. Smith property to construct, or bond for construction, a half section of Relocated Route 659 prior to the approval of the first record plat or site plan. Site plans and record plats being reviewed for the C.D. Smith project, but none have been approved yet. Proffer IV.C provides for a cash equivalent contribution to be paid to the County if the road improvements are constructed by others. In the event that the LCPS constructs Route 659 Relocated, a separate request for the cash equivalent contribution will be sent to Two Greens Kirkvest.

C. ***Cash Equivalent Contribution***

> *Unless otherwise provided in these proffers, the Owner shall contribute to the County, or its designee, including a Community Development Authority ("CDA") or one or more private parties who collectively agree to construct public roadway improvements, an amount equal to the actual cost of constructing the transportation improvements (in the event the improvement is constructed) or an amount equal to the bonded cost estimate (in the event the improvement is bonded for construction), described above in Proffer IV.B 1.a and b and IV.B 2.a, in lieu of actual construction if said improvements have been either constructed or bonded by others prior to bonding for construction by the Owner. For the purposes of determining the in-lieu-of contribution, construction costs shall be deemed to include all engineering, surveying, bonding, permit fees, utility relocation, and other hard costs of construction based on paid invoices. Such contribution in lieu of actual construction shall be paid at the time the Owner would otherwise have been required by these Proffers to bond or construct such improvements. As determined by the County, such contribution shall either be used to reimburse the party who constructed such improvements or for regional roadway improvements in the same Planning area as the Property.*

This determination applies solely to the referenced property and is not binding upon the County, the Zoning Administrator or any other official with respect to any other property. No person may rely upon this determination with respect to any property other than the referenced property.

Please be advised that any person aggrieved, or any officer, department or agency of Loudoun County affected by an order, requirement, decision or determination made by an administrative officer in the administration or enforcement of the provisions of the *Zoning Ordinance* may appeal said decision within thirty days to the Board of Supervisors in strict accordance with Section 15.2-2301 of the *Code of Virginia*. This decision is final and unappealable if not appealed within 30 days.

If you have any questions concerning this correspondence, please contact me via email (susan.glass@loudoun.gov) or you may call me at 703-777-0251.

Sincerely,

Susan Glass
Proffer Manager

Cc via email: Dan Schardein, Zoning Administrator
Stevens Miller, Dulles District Supervisor
Sara Howard-O'Brien, Land Management Supervisor, LCPS
Mike Seigfried, Assistant Director for Land Subdivision
Nancy Berfield, Permits Proffer Manager

9. **STONE CARVER DRIVE**

Stone Carver Drive shown on Sheets 4 and 5 of the CDP shall be constructed as a public street with the traffic calming measures depicted on Sheet 15 of the Plans, subject to VDOT approval.

10. **DESTINY DRIVE**

Destiny Drive (a.k.a. Pebble Drive on the ZMAP 1994-0017 CDP) shall be constructed from its current southern terminus to the southern boundary of Stone Ridge and shall be open to traffic, but not necessarily accepted by VDOT for maintenance, no later than 9 months after the approval of this Application.

C. WESTERN BYPASS/ROUTE 659 RELOCATED

1. WESTERN TRANSPORTATION CORRIDOR – HEREBY DELETED

3. ROUTE 659 RELOCATED (NORTHSTAR BOULEVARD)

(a) Phase IIIB. Upon request by the County, the Owner shall dedicate to the County at no public cost a one hundred and twenty (120) foot wide right-of-way, increasing in width as necessary for turn lanes as required by VDOT and the County, for the construction of Northstar Boulevard (a.k.a. Route 659 Relocated) through the Property from Tall Cedars Parkway to the southern boundary of Stone Ridge in the general location shown on Sheet 4 of the CDP. The aforesaid right-of-way width will allow for the ultimate construction of Route 659 Relocated to six lanes in accordance with the County's Countywide Transportation Plan; however, the Owner shall be responsible only for construction as provided herein. The Owner shall design, bond and construct as a public street the eastern two lanes of Northstar Boulevard between Tall Cedars Parkway and the southern boundary of Stone Ridge, inclusive of an adjoining trail (10 feet in width) along the easterly right-of-way line. These improvements shall be bonded for construction prior to the earlier to occur of (i) the issuance of the 301st cumulative residential zoning permit in Land Bays 1, 2, 3, 4 and 5R, or (ii) the issuance of the 1st zoning permit in Land Bay 1. This road improvement shall be constructed and open to traffic, but not necessarily accepted by VDOT for maintenance, prior to the earlier to occur of (i) the issuance of the occupancy permit for the 301st cumulative residential unit in Land Bays 1, 2, 3, 4, and 5R or (ii) the issuance of the 1st occupancy permit in Land Bay 1.

F. SIGNALIZATION

3. Stone Springs Boulevard and Millstream Drive. The Owner shall submit to the County and VDOT a traffic signal warrant analysis for the intersection of Stone Springs Boulevard and Millstream Drive in conjunction with submission of the first site plan for Land Bay EE2A or, in the event Land Bay EE2A is consolidated for development purposes with the Remaining Portion of Land Bay EE2, as shown on the CDP, with the submission of the first site plan for the consolidated area. In the event the analysis concludes and VDOT concurs that a traffic signal is warranted at this intersection, the Owner shall, subject to the release to the Owner by the County of all funds collected by the County for such signal, design, construct and install the signal prior to the issuance of the first residential occupancy permit for Land Bay EE2 or EE2A. In the event that the funds collected by the County for such signal exceed the cost to design, construct and install the signal, the County shall be required to

refunded to Buyer, and the parties shall have no rights or obligations except such as specifically survive termination. Buyer acknowledges that Seller has filed and will pursue during the term of this Agreement and afterward, if necessary, ZCPA 2006-0003 that has been filed by Seller with respect to the Property and other land of Seller (the "**Stone Ridge ZCPA**"). Buyer agrees to join in any disclosure instruments or documents required to effect the Stone Ridge ZCPA within fifteen (15) business days after request, provided the same are consistent with the terms of the pending Stone Ridge ZCPA on the date hereof, and do not prohibit use and occupancy of the Property by Buyer as contemplated herein.

(b) In order to use the Property for its intended purpose as a public school or schools, Buyer may require a permit from Loudoun County to show a potential school site on the Property and nine additional parcels of land that together with the Property comprise the "**Assemblage**," which is shown on **Exhibit "A-1**". The required approval is called the "**Commission Permit.**" Buyer has agreed to obtain the Commission Permit within 150 days after all of the parcels in the Assemblage are under contract. Commencing not later than the date all such parcels are under Contract, Buyer will diligently pursue the Commission Permit and use good faith efforts to obtain the same within 150 days after the Effective Date.

(c) In order to use the Assemblage for its intended purpose as a public school, Buyer is required to obtain a special exception applying to land including the Property from Loudoun County, generally in accordance with **Exhibit "B"**, and Buyer may also elect to obtain a Zoning Amendment for land within the Assemblage other than the Property to amend the zoning and proffers attributable to such other land (the "**School ZMAP**", and together with the special exception, the "**Special Exception**"). Further, in the event Buyer is required to amend the Proffers for the Property then a Zoning Concept/Proffer Amendment may be filed by Buyer, subject to the review and approval of Seller in its sole and absolute discretion. Following submission of the application for the Special Exception, Buyer will diligently pursue, at Buyer's cost, approval of the Special Exception from all such applicable authorities. Buyer shall have no obligation to appeal any adverse decision received in connection with the proposed Special Exception or to file any litigation in connection with the same. The obligation of Buyer to consummate the purchase and sale of the Property as contemplated by this Agreement is conditioned upon the Special Exception having been issued and all appeal periods having expired without any appeal having been filed (or if an appeal has been filed, such appeal has been resolved in favor of issuance of the Special Exception). If the Special Exception is denied or if the Special Exception has not been issued by the Final Settlement Date, then and in that event, Buyer shall have the right to terminate this Agreement by notice to Seller, in which case the Deposit shall be refunded to Buyer, at Seller's request, Buyer will withdraw the application for the Special Exception, and the parties shall have no rights or obligations except such as specifically survive termination.

14. **Post-Closing Development Matters**. (a) After Settlement, Buyer and Seller agree to reasonably cooperate with each other in the development of each party's respective property within the Stone Ridge community, consistent with this Agreement, and to grant to one another and applicable governmental authorities utility, slope, sanitary sewer, water line, drainage, storm water outfall, storm water management and other development easements over the Property and the adjacent portions of the Stone Ridge community owned or controlled by Seller without cost. Seller shall make the dedications to governmental authorities of the future rights-of-way shown on **Exhibit "B"** and any other dedications that do not adversely affect the use and development of Seller's property. The easements and dedications shall be in a form and in locations reasonably acceptable to the granting party and the costs incurred in connection with the same shall be borne by the party requesting the easement(s) or dedications(s).

(b) During the ordinary course of its development of other portions of the Stone Ridge community, Seller, at its cost, shall design, construct and dedicate two lanes of the ultimate four lane Route 659 Relocated from Tall Cedars Parkway to "Road A", as depicted on **Exhibit "B"** as "**Route 659 Required Construction**". If this Agreement does not terminate pursuant to **paragraph 5(b)** above, then Seller shall commence preparation of plans for the Route 659 Required Improvements not later than the date thirty (30) days after the Due Diligence Date, and shall submit the same to the appropriate authorities of Loudoun County for approval within sixty (60) days after the Due Diligence Date and thereafter diligently pursue approval of the same. Subject to Force Majeure (hereinafter defined), the Route 659 Required Construction shall be substantially completed (meaning that the road is base paved and open for use) by the Required Improvements Completion Date (hereinafter defined), and Buyer agrees to give

Seller Buyer's Twelve Month Notice as provided in **subparagraph 14(g)** below.. Buyer shall grant, without consideration, such easements, for construction, utilities, slope, drainage, installation, use and maintenance as may be required by the governing jurisdiction for construction of the road from time to time in connection with the Route 659 Required Construction, provided the same do not adversely affect Buyer's intended use of the Property as contemplated herein. Seller shall provide Buyer with a draft of any such deed of easement, on the form required by the governing jurisdiction, concurrently with Seller's initial submission of the same to Loudoun County. Buyer shall have forty-five (45) days after receipt in which to review and approve any such deed of easement, and thereafter Buyer will execute the final approved deed of easement within fifteen (15) days after Seller delivers the same for execution. Upon substantial completion of any portion of the Route 659 Required Construction, until the same has been accepted by a governmental authority for maintenance, the parties shall grant to the other and its employees, agents, officers, tenants, and invitees a temporary nonexclusive right and easement across the Route 659 Required Construction, which shall automatically terminate on the date the Route 659 Required Construction is accepted for public use by the appropriate governmental authority. If the Stone Ridge ZCPA is approved, and it requires Seller to construct additional improvements to Route 659 Relocated ("**Required Additional Improvements**"), then Seller will commence the Required Additional Improvements when it commences the Route 659 Required Construction (but shall not be required to construct other than in an orderly manner nor prior to approval of the Stone Ridge ZCPA), and will pursue the same to completion. The escrow provisions of **paragraph 14(g)** do not apply to any such Required Additional Improvements, however. Subject to Force Majeure, If the Required Additional Improvements are required, and they are not completed within twelve (12) months after the Twelve Month Notice (hereinafter defined), then as Buyer's sole remedy, Buyer may send a notice to Seller, and if Seller does not commence completion within thirty (30) days after such notice and diligently pursue the same to completion, then Buyer may elect to perform construction of the Required Additional Improvements on Seller's behalf. If Buyer assumes construction of the Required Additional Improvements, then the applicable contracts, plans and specifications for the same shall be deemed assigned to Buyer (on a non-exclusive basis to the extent they cover other improvements), and Seller shall grant the required easements and make the required dedications necessary for the Required Additional Improvements, and Buyer shall continue with the same plans and contractors and assume the such contracts and plans and specifications and shall, prior to commencement of construction, replace any bonds posted by Seller with respect to the Required Improvements, and Seller shall have no liability for matters arising after the date of such assignment, except the obligation to make payments specified by this Agreement. Buyer will submit invoices and reasonable back-up to Seller evidencing the cost incurred by Buyer in completing the Required Additional Improvements in accordance with the plans therefore, and Seller will reimburse such amount to Buyer within first to occur of thirty (30) days after (i) the date Seller would be required to complete the Required Additional Improvements pursuant to the approved Stone Ridge ZCPA or (ii) the date Buyer receives a certificate of occupancy for a school on the Property..

(c) During the ordinary course of its development of other portions of the Stone Ridge community, Seller, at its cost, shall construct approximately 300 linear feet of "Road A" from Route 659 Relocated westward to a proposed entrance to the Property, as depicted on **Exhibit "B"** as "**Road A Required Construction**". If this Agreement does not terminate pursuant to **paragraph 5(b)** above, then Seller shall commence preparation of plans for the Road A Required Improvements not later than the date thirty (30) days after the Due Diligence Date, and shall submit the same to the appropriate authorities of Loudoun County for approval within sixty (60) days after the Due Diligence Date and thereafter diligently pursue approval of the same. Subject to Force Majeure, the Road A Required Construction shall be substantially completed (meaning that the road is base paved and open for use) by the Required Improvements Completion Date, and Buyer agrees to give Seller Buyer's Twelve Month Notice as provided in **subparagraph 14(g)** below. Buyer shall grant, without consideration, such easements, for construction, utilities, slope, drainage, installation, use and maintenance as may be required by the governing jurisdiction for construction of the road from time to time in connection with the Road A Required Construction provided the same do not adversely affect Buyer's intended use of the Property as contemplated herein. Seller shall provide Buyer with a draft of any such deed of easement, on the form required by the governing jurisdiction, concurrently with Seller's initial submission of the same to Loudoun County. Buyer shall have forty-five (45) days after receipt in which to review and approve any such deed of easement, and thereafter Buyer will execute the final approved deed of easement within fifteen (15) days after Seller delivers the same for execution. Upon substantial completion of any portion of the Road A Required Construction, until the same has been accepted by a governmental authority for

HS-7 DULLES SOUTH HIGH SCHOOL AND ELEMENTARY SCHOOL, GOSHEN ROAD ASSEMBLAGE

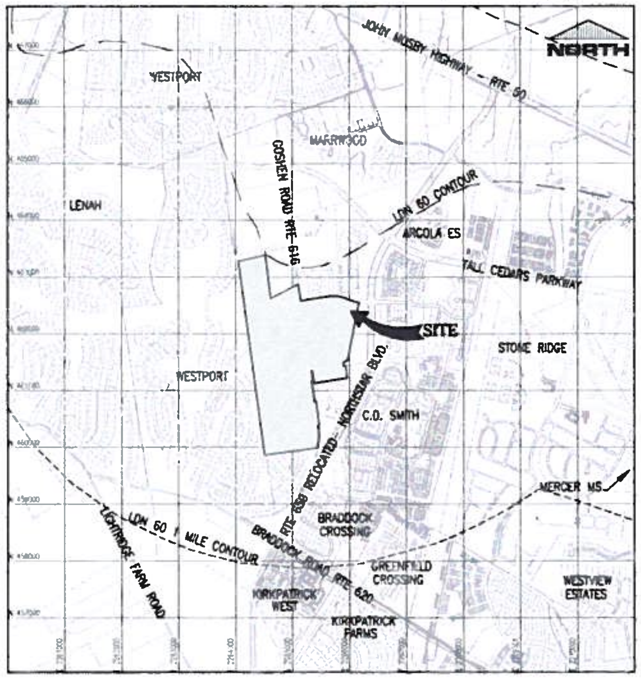
SPECIAL EXCEPTION PLAT (SPEX 2010-0003)

ZONING MAP AMENDMENT (ZMAP 2010-0001)

DULLES ELECTION DISTRICT LOUDOUN COUNTY, VIRGINIA

GENERAL NOTES

1. THIS SPECIAL EXCEPTION PLAT INCLUDES A PORTION (23.74 AC) OF TAX ASSESSMENT MAP REF /100, PARCEL 54 (PIN/ 247-28-4151) PER PLAT 2009-0040 AND ALL OF TAX ASSESSMENT MAP REF /100, PARCEL 36A (PIN/ 248-40-6530), /100, PARCEL 2(4) (PIN/ 247-17-3577), /100 ((9)), PARCEL 2 (PIN/ 247-17-8630), /100 ((9)), PARCEL 1 (PIN/ 248-47-9700), /100, PARCEL 31B (PIN/ 248-47-0000), /100 ((2)), PARCEL 3 (PIN/ 248-47-8234), /100 ((2)), PARCEL 2 (PIN/ 248-37-0082), /100 ((2)), PARCEL 1 (PIN/ 248-37-9637), /100, PARCEL 33 (PIN/ 248-38-2718) THAT IS LOCATED ON THE WEST SIDE OF RELOCATED ROUTE 659. THE PROPOSED SPECIAL EXCEPTION AREA EQUALS 97.16 ACRES.
2. THE BOUNDARY INFORMATION SHOWN HEREON IS TAKEN FROM ALTA/ACSM SURVEYS COMPLETED BY BOWMAN CONSULTING GROUP DATED JANUARY 07, 2010 AND JANUARY 11, 2010.
3. THE SUBJECT PROPERTIES ARE CURRENTLY ZONED TR1-UBF AND PD-GI WITH AIRPORT IMPACT OVERLAY DISTRICT (AI), WITHIN 1-MILE OF LDN 60 CONTOUR, AND FLOODPLAIN OVERLAY DISTRICT (FOD), MAJOR - GREATER THAN 640 ACRES, AS ADMINISTERED BY THE REVISED 1993 LOUDOUN COUNTY ZONING ORDINANCE.
4. THE ZONING MAP AMENDMENT APPLICATION PROPOSES TO REZONE THE THREE ACRE PD-GI PARCEL (MCPI/ 248-40-6530; TAX ASSESSMENT MAP REF /100 PARCEL 36A) TO TR1-UBF, WITH AIRPORT IMPACT OVERLAY DISTRICT (AI), WITHIN 1-MILE OF LDN 60 CONTOUR, AS ADMINISTERED BY THE REVISED 1993 LOUDOUN COUNTY ZONING ORDINANCE. SAID PARCEL WILL BE CONSOLIDATED WITH THE REMAINDER OF THE PROJECT ACREAGE UPON APPROVAL OF THE PROPOSED REZONING AND SPECIAL EXCEPTION APPLICATIONS.
5. THE FLOODPLAIN INFORMATION ON SITE IS TAKEN FROM FLOODPLAIN STUDY (FPST) 2005-0004.
6. TOPOGRAPHIC INFORMATION IS TAKEN FROM AERIAL SURVEY FLOWN ON APRIL 6, 2004 BY AIR SURVEY AND HAS A CONTOUR INTERVAL OF 2'.
7. WETLAND INFORMATION FOR THE SITE IS BASED ON THE DRAFT REPORT ENTITLED "WETLAND DELINEATION - DULLES SOUTH HIGH SCHOOL" PREPARED BY BOWMAN CONSULTING GROUP, LTD. DATED 2/16/10. A JURISDICTIONAL DETERMINATION CONFIRMING THIS WETLAND DELINEATION HAS BEEN REQUESTED AND IS PENDING ISSUANCE BY THE U.S. ARMY CORPS OF ENGINEERS.
8. FIRE HYDRANTS WILL BE SHOWN ON THE FINAL SITE PLAN WITH FINAL ENGINEERING AND SHALL BE LOCATED IN ACCORDANCE WITH LOUDOUN WATER AND FIRE MARSHAL STANDARDS.
9. PHASE I ARCHEOLOGICAL ASSESSMENTS HAVE BEEN PERFORMED BY THUNDERBIRD ARCHEOLOGICAL ASSOCIATES INC. (DATED SEPTEMBER, 2000 AND DECEMBER, 2008) AND CULTURAL RESOURCES, INC. (DATED MARCH, 2005) AND A PRELIMINARY ARCHITECTURAL SURVEY HAS BEEN COMPLETED BY COASTAL CAROLINA RESEARCH (DATED JUNE, 2004). A CONSOLIDATED PHASE I REPORT FOR THE ENTIRE 97-ACRE PROPERTY HAS BEEN PREPARED BY THUNDERBIRD ARCHEOLOGY (DATED DECEMBER, 2008). NO SIGNIFICANT ARCHEOLOGICAL OR HISTORIC FEATURES ARE LOCATED ON THIS SITE.
10. ALL SITE LIGHTING WILL COMPLY WITH SECTION 5-1504 OF THE REVISED 1993 LOUDOUN COUNTY ZONING ORDINANCE. LIGHTING WILL BE SHOWN ON THE FINAL SITE PLAN UPON FINAL ENGINEERING AND SHALL BE LOCATED IN ACCORDANCE WITH THE LOUDOUN COUNTY FSM.
11. EXISTING AND FUTURE DEVELOPMENT INFORMATION SHOWN HEREON TAKEN FROM THE FOLLOWING PLANS:
    - A. WESTPORT PRELIMINARY PLAT SBPL 2006-0040 (APPROVED SEPTEMBER 13, 2007)
    - B. STONE RIDGE ZONING MAP AMENDMENT AND ZONING CONCEPT PLAN AMENDMENT ZMAP 2002-0013 / ZCPA 2002-0004 (APPROVED DECEMBER 6, 2005)
    - C. DULLES SOUTH WATER TANKS ZONING CONCEPT PLAN AMENDMENT ZCPA 2007-0007 (APPROVED FEBRUARY 3, 2008)
    - D. CO SMITH: ZMAP 2002-0023 (APPROVED OCTOBER 11, 2005)
    - E. BRADDOCK CROSSING, ZMAP 2003-0012 (APPROVED JUNE 21, 2005)
    - F. KIRKPATRICK WEST, ZMAP 2002-0001 (APPROVED DECEMBER 6, 2005)
    - G. LENAH, SBPL 2008-0002 (APPROVAL PENDING)
    - H. STONE RIDGE ZONING MAP AMENDMENT, ZMAP 2006-0011 (APPROVAL PENDING)
12. IT IS THE INTENT OF THE APPLICANT TO PURSUE ABANDONMENT OF THE SEGMENT OF GOSHEN ROAD (VA ROUTE 616) FROM THE INTERSECTION WITH THE PLANNED ACCESS ROAD "A" SOUTH TO BRADDOCK ROAD. AN ABANDONMENT APPLICATION HAS BEEN FILED FOR THIS SEGMENT OF GOSHEN ROAD PURSUANT TO VDOT REQUIREMENTS.
13. PARCEL CONSOLIDATION OR AN APPROPRIATE BOUNDARY LINE ADJUSTMENT WILL OCCUR TO CREATE A SINGLE DEVELOPMENT PARCEL PRIOR TO SITE PLAN APPROVAL.
14. THE SITE WILL BE PROVIDED WITH PUBLIC SEWER AND WATER. THESE AND OTHER UTILITIES INCLUDING ELECTRIC, TELEPHONE AND POTENTIALLY GAS ARE LOCATED NEARBY AND WILL BE EXTENDED TO SERVE THE PROPOSED SCHOOLS FACILITIES.
15. ALL RIGHTS OF WAY AND INTERSECTIONS SHALL CONFORM TO VIRGINIA DEPARTMENT OF TRANSPORTATION AND LOUDOUN COUNTY STANDARDS.
16. BUFFERING AND SCREENING SHALL MEET THE REQUIREMENTS OF SECTION 5-1400 OF THE REVISED 1993 ZONING ORDINANCE. YARDS AND BUFFERS SHALL BE BASED UPON THE CONSOLIDATED PARCEL BOUNDARIES. AN ENHANCED BUFFER WILL BE PROVIDED ALONG THE SOUTH AND WEST BOUNDARIES OF THE ELEMENTARY SCHOOL PORTION OF THE SITE. ADDITIONAL LANDSCAPE ENHANCEMENTS WILL BE PROVIDED TO THE AREAS NORTH AND WEST OF THE BUS LOOP AND SOUTH OF THE HS PARKING LOT. ALL SUCH ENHANCEMENTS ARE DEPICTED AND DESCRIBED ON SHEET 3 OF THIS PLAT.
17. BASED UPON PRELIMINARY SITE INVESTIGATION AND A PHASE I ENVIRONMENTAL SITE ASSESSMENT PREPARED BY BOWMAN CONSULTING GROUP, DATED FEBRUARY 2010, THERE ARE NO KNOWN HAZARDOUS OR TOXIC SUBSTANCES ON SITE AS SET FORTH IN TITLE 40 CODE OF FEDERAL REGULATIONS PARTS 116.4 302.4 AND 355, OR ANY HAZARDOUS WASTE AS SET FORTH IN THE COMMONWEALTH OF VIRGINIA DEPARTMENT OF WASTE MANAGEMENT. THERE ARE THREE (3) ABOVE-GROUND FUEL STORAGE TANKS LOCATED ON SITE THAT WILL BE REMOVED.
18. SOIL INFORMATION SHOWN IS FROM LOUDOUN COUNTY GIS SOILS DATA.
19. AN IRRIGATION WELL IS PROPOSED FOR THE HIGH SCHOOL PORTION OF THE SITE FOR THE PURPOSES OF PLAYING FIELD MAINTENANCE. THE PROPOSED STADIUM FIELD WILL BE AN ARTIFICIAL TURF SURFACE. IN ADDITION, IF FUNDING IS AVAILABLE, ONE PRACTICE FIELD MAY ALSO BE CONSTRUCTED WITH AN ARTIFICIAL TURF SURFACE.
20. A BIO-RETENTION FACILITY IS PROPOSED WITHIN THE SITE TO ENCOURAGE INFILTRATION AND GROUND WATER RECHARGE. FINAL LOCATION WILL BE DETERMINED AT FINAL ENGINEERING.
21. THE SITE WILL BE SERVICED BY THE ARCOLA FIRE AND RESCUE STATION.
22. THE PROPOSED SCHOOL USE IS EXEMPT FROM THE SIGNAGE REQUIREMENTS OF SECTION 5-1200 OF THE REVISED 1993 LOUDOUN COUNTY ZONING ORDINANCE. LOCATIONS WILL BE SHOWN ON THE SITE PLAN OR FUTURE SIGN PERMIT APPLICATIONS.
23. ALL REQUIRED FEDERAL/STATE PERMITS SHALL BE OBTAINED.
24. ALL EXISTING STRUCTURES LOCATED ON SITE SHALL BE REMOVED.
25. OIL-WATER SEPARATION WILL BE PROVIDED IN BUS LOOP/PARKING AREA. THE LOCATION OF THIS STRUCTURE IS TO BE DETERMINED AT FINAL ENGINEERING.



VICINITY MAP
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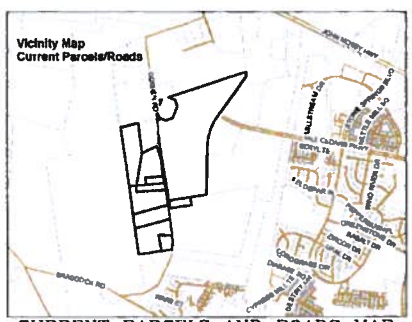


CURRENT PARCELS AND ROADS MAP

OWNERS

LOUDOUN COUNTY SCHOOL BOARD
21000 EDUCATION COURT, 2ND FLOOR
ASHBURN, VA 20148

SIGNATURE DATE

STONE RIDGE COMMUNITY DEV IV LLC
C/O VAN METRE COMPANIES
5252 LYNGATE CT
BURKE, VA 22015

SIGNATURE DATE

SHEET INDEX

APPLICANT

LOUDOUN COUNTY SCHOOL BOARD
21000 EDUCATION COURT, 2ND FLOOR
ASHBURN, VA 20148
PHONE: (571) 252-1050

SIGNATURE DATE

CONSULTANTS

BOWMAN CONSULTING GROUP
101 SOUTH STREET SE
LEESBURG, VA 20175
PHONE: (703) 443-2400

GOROVE/ SLADE ASSOCIATES
3914 CENTERVILLE ROAD, SUITE 330
CHANTILLY, VA 20151
PHONE: (703) 787-9595

ADJACENT PROPERTY OWNER INFORMATION

PIN:	OWNER:	ADDRESS:
248-36-3758	TOLL VA VI LP	19775 BELMONT EXECUTIVE PLAZA SUITE 250 ASHBURN, VA 20147
248-27-8446	TOLL VA VI LP	19775 BELMONT EXECUTIVE PLAZA SUITE 250 ASHBURN, VA 20147
248-28-1176	TOLL VA VI LP	19775 BELMONT EXECUTIVE PLAZA SUITE 250 ASHBURN, VA 20147
247-27-7911	TOLL VA VI LP	19775 BELMONT EXECUTIVE PLAZA SUITE 250 ASHBURN, VA 20147
248-30-5519	TWO GREENS/KIRKVEST LLC	8614 WESTWOOD CENTER DR. SUITE 900 VIENNA, VA 22182-2265
248-39-4888	TWO GREENS/KIRKVEST LLC	8614 WESTWOOD CENTER DR. SUITE 900 VIENNA, VA 22182-2265
204-15-3843	STONE RIDGE COMMUNITY DEVELOPMENT IV LLC	5252 LYNGATE CT. BURKE, VA 22015
247-18-9795	STONE RIDGE COMMUNITY DEVELOPMENT IV LLC	5252 LYNGATE CT. BURKE, VA 22015
247-28-4151	STONE RIDGE COMMUNITY DEVELOPMENT IV LLC	5252 LYNGATE CT. BURKE, VA 22015
247-47-9865	STONE RIDGE COMMUNITY DEVELOPMENT II LLC	5252 LYNGATE CT. BURKE, VA 22015
247-38-1737	SAACHSEN, BRUCE & ERIN KENNA R/S	24612 GOSHEN RD. ALDIE, VA 20105-2520
247-37-4305	AMERICA, DAVID L.	24623 GOSHEN RD. ALDIE, VA 20105-2571
203-15-3714	MOON GLADE LLC	24012 FREDERICK RD #200 CLARKSBURG, MD 20871-9718
247-19-1835	LOUDOUN COUNTY SANITATION AUTHORITY	PO BOX 4000 ASHBURN, VA 20146-2591

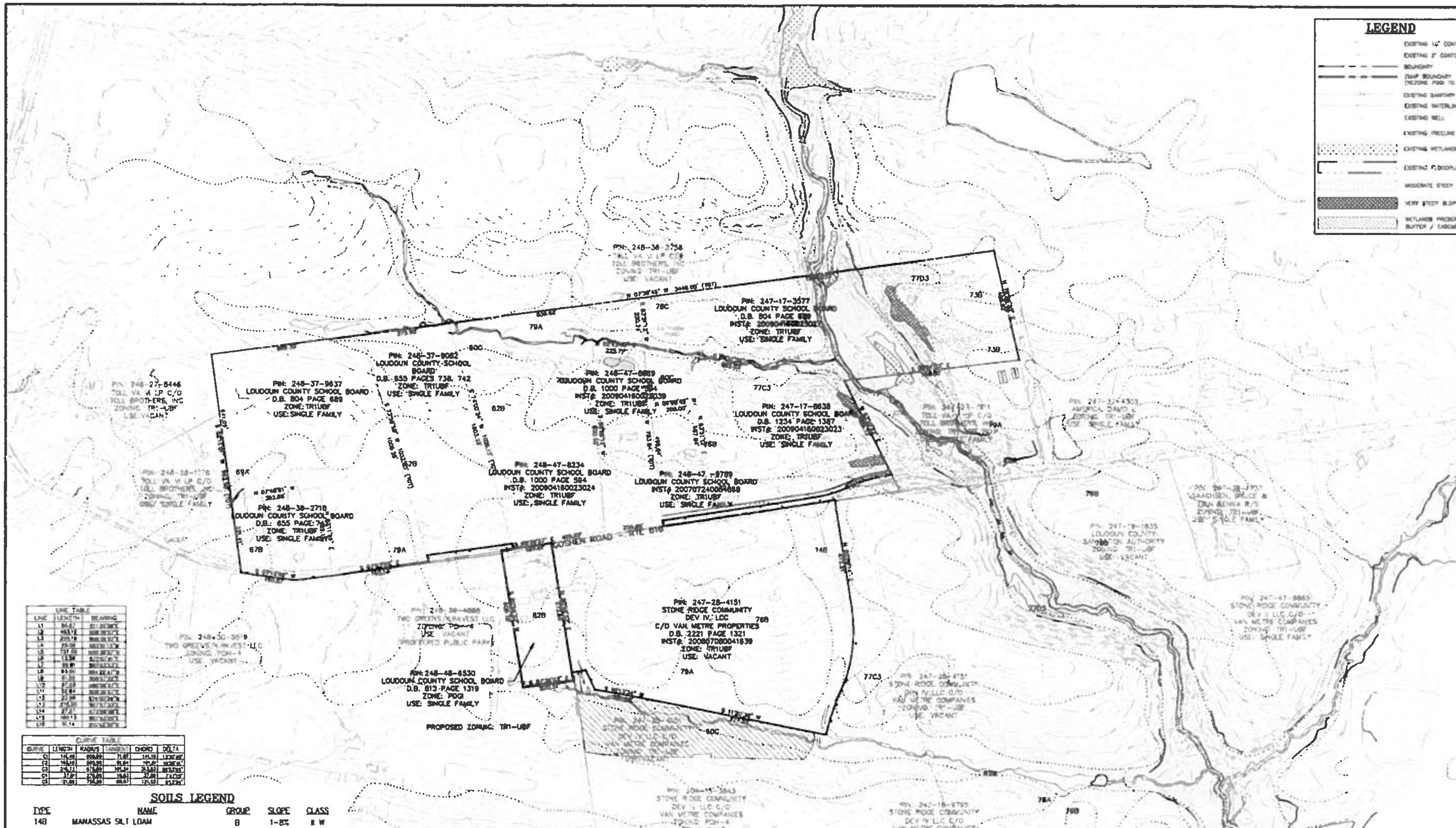
ZMAP 2010-0001 SPEX 2010-0003

COVER SHEET
HS-7 DULLES SOUTH HIGH SCHOOL AND ELEMENTARY SCHOOL, GOSHEN ROAD ASSEMBLAGE
SPECIAL EXCEPTION/ REZONING PLAT
DULLES ELECTION DISTRICT LOUDOUN COUNTY, VIRGINIA

Bowman CONSULTING
Bowman Consulting Group, Ltd.
101 South Street, S.E.
Leesburg, Virginia 20175
Phone: (703) 443-2400
Fax: (703) 443-2425
www.bowmanconsulting.com

PLAN STATUS	
01/08/10	PER COUNTY COMMENTS
07/23/10	PER COUNTY COMMENTS
DATE	DESCRIPTION

BR DESIGN	JAE DRAWN	CMM CHKD
SCALE	AS SHOWN	
JOB No.	5185-01-002	
DATE	MARCH 8, 2010	
FILE No.	5185-D-ZP-001	
SHEET	1 of 7	



SOILS LEGEND

TYPE	NAME	GROUP	SLOPE	CLASS
14B	MANASSAS SILT LOAM	B	1-8%	II W
60C	SYCOLINE-CATLETT COMPLEX	D	7-15%	II R
62B	KELLY-SYCOLINE COMPLEX	D	3-8%	II WP
67B	HAYMARKET AND JACKLAND SOILS	D	2-8%	IV P
69A	ELBERT SILTY CLAY LOAM	D	0-3%	IV PW
73B	PENN SILT LOAM	C	3-8%	I
76B	OATLANDS GRAVELLY SILT LOAM	B	8-15%	I
76C	OATLANDS GRAVELLY SILT LOAM	B	8-15%	I
77C3	NESTORIA GRAVELLS SILT LOAM	C	8-15%	II R
77D3	NESTORIA GRAVELY SILT LOAM	C	15-25%	II R
78A	DULLES SILT LOAM	C	0-3%	IV W
79A	ALBANO SILT LOAM	D	0-3%	IV W

(67B) DENOTES SOIL TYPE

THE SUBJECT DEVELOPMENT SITE DOES CONTAIN CLASS III AND/OR CLASS IV SOILS, PER THE LATEST COUNTY SOILS MAP AND AS IDENTIFIED BY THE INTERPRETIVE GUIDE TO SOILS MAPS, LOUDOUN COUNTY, VIRGINIA.

AREA TABULATIONS

(1) PIN 247-17-3577	654,271 S.F.	OR	15.02 AC.
(2) PIN 248-47-8669	189,921 S.F.	OR	4.36 AC.
(3) PIN 248-47-8234	563,231 S.F.	OR	12.93 AC.
(4) PIN 247-17-8636	467,834 S.F.	OR	10.74 AC.
(5) PIN 248-47-9789	98,446 S.F.	OR	2.26 AC.
(6) PIN 248-37-9082	373,309 S.F.	OR	8.57 AC.
(7) PIN 248-37-9637	611,582 S.F.	OR	14.04 AC.
(8) PIN 248-38-2718	130,680 S.F.	OR	3.00 AC.
(9) PIN 248-48-6530	130,680 S.F.	OR	3.00 AC.
*(10) PIN 247-28-4151	1,012,334 S.F.	OR	23.24 AC.
TOTAL	4,232,288 S.F.	OR	97.16 AC.

* PARCEL IS SUBJECT TO BLAD 2009-0046.

ACREAGE TO BE REZONED

PIN 248-48-6530 130,680 S.F. OR 3.00 AC.

ACREAGE BASED ON LOUDOUN COUNTY ASSESSMENT RECORDS. FINAL SITE ACREAGE MAY VARY BASED UPON ALTA SURVEY AND CONSOLIDATION OF PARCELS.

NOTE:

1. THE DEPARTMENT OF CONSERVATION AND RECREATION, DIVISION OF NATURAL HERITAGE, HAS REVIEWED THE PROPOSED SCHOOL SITE AND HAS STATED IN A LETTER DATED SEPTEMBER 3, 2009, THAT NO ADVERSE IMPACT TO NATURAL HERITAGE RESOURCES IS ANTICIPATED. NATURAL HERITAGE RESOURCES ARE DEFINED AS THE HABITAT OF RARE, THREATENED, OR ENDANGERED PLANT AND ANIMAL SPECIES, UNIQUE OR EXEMPLARY NATURAL COMMUNITIES, AND SIGNIFICANT GEOLOGIC FORMATIONS.
2. ALL EXISTING STRUCTURES ARE TO BE REMOVED.
3. SEE NOTE 9 ON SHEET 1 REFERENCING ARCHEOLOGICAL ASSESSMENTS.
4. SEE SHEET 4 FOR DESCRIPTION OF TREE COVER.
5. THE PROPERTY CONTAINS NO KNOWN GRAVES, OBJECTS, OR STRUCTURE MARKING BURIAL PLACES AS DETERMINED BY VISUAL SURVEY AND SEARCH OF AVAILABLE RECORDS.
6. STEEP SLOPE DATA DERIVED FROM TOPOGRAPHIC INFORMATION TAKEN FROM AERIAL SURVEY FLOWN ON APRIL 6, 2004 BY AIR SURVEY WITH A CONTOUR INTERVAL OF 2'.

ZMAP 2010-0001 SPEX 2010-

EXISTING CONDITIONS

HS-7 DULLES SOUTH HIGH SCHOOL AND ELEMENTARY SCHOOL, GOSHEN ROAD ASSEMBLAGE

SPECIAL EXCEPTION/ REZONING PLAT

DULLES ELECTION DISTRICT LOUDOUN COUNTY, VIRGINIA

Bowman CONSULTING
Bowman Consulting Group, Ltd.
101 South Street, S. E.
Leesburg, Virginia 20175

PLAN STATUS

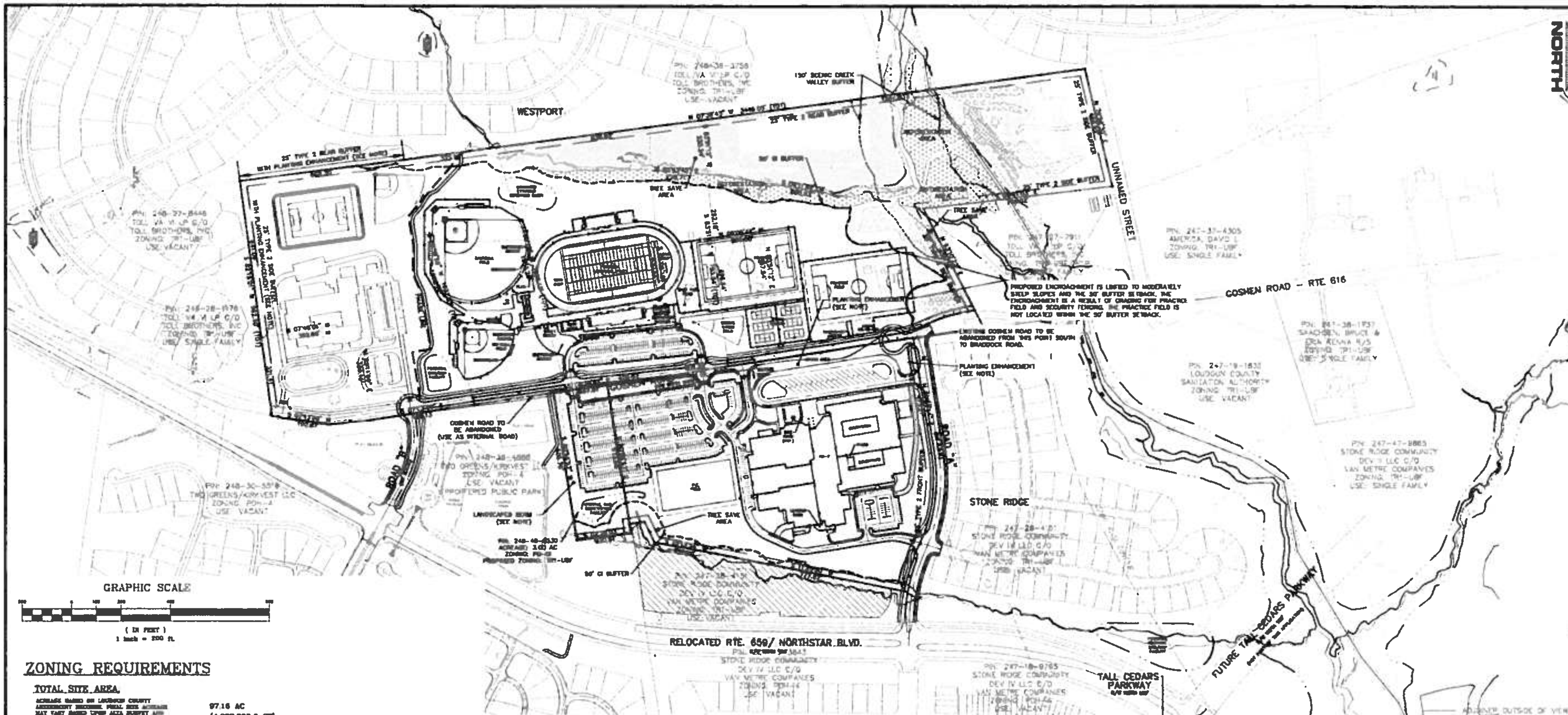
DESIGN BR | DRAWN JAE | CHKD CMM

SCALE H: 1"=200'

JOB No. 5185-01-002

DATE MARCH 8, 2010

FILE No. 5185-0-ZP-001



GRAPHIC SCALE

(IN FEET)
1 inch = 200 ft.

ZONING REQUIREMENTS

TOTAL SITE AREA

ACREAGE BASED ON LOUDOUN COUNTY ASSESSMENT RECORDS. FINAL SITE ACREAGE MAY VARY BASED UPON ALTA SURVEY AND CONSOLIDATION OF PARCELS. — 97.16 AC (4,232,289.6 SF)

	EXISTING	PROPOSED
NO. OF LOTS:	10	1

PROPOSED USE:

EDUCATIONAL USES	MAXIMUM FLOOR AREA
– 2 STORY HIGH SCHOOL (HS-7)	282,000 SF
– 2 STORY ELEMENTARY SCHOOL	105,000 SF

NOTE: ACCESSORY STRUCTURES TO INCLUDE, BUT NOT LIMITED TO, SHEDS, PRESS BOXES, AND ALL OTHER SUPPORTING FACILITIES, WILL TOTAL UP TO 10,000 SF IN ADDITION TO FLOOR AREA OF HIGH SCHOOL BUILDING.

TR1-UBF ZONING DISTRICT	EXISTING	PROPOSED
MINIMUM LOT SIZE:	NONE	NONE
MINIMUM OPEN SPACE:	50%	50% MIN. TO BE PROVIDED
MAXIMUM BUILDING HEIGHT:	40' MAX	40' MAX

MINIMUM YARDS

FRONT: 10' (TO BE PROVIDED)
SIDE: 5' (TO BE PROVIDED)
REAR: 25' (TO BE PROVIDED)

SECTION 5-1101 – PARKING SPACES REQUIRED

EDUCATIONAL USE PARKING REQ.: 1 SPACE PER CLASSROOM PLUS .2 PER STUDENT OVER DRIVING AGE (MEET OR EXCEED)

LOADING SPACE REQ.: 1 SPACE PER 100,000 SF OF GFA (TO BE PROVIDED)

SECTION 5-1400 – BUFFERING AND SCREENING

UPON PARCEL CONSOLIDATION THIS SITE WILL HAVE THE FOLLOWING BUFFER YARDS:

1. A MINIMUM 25' TYPE 2 BUFFER SHALL BE PROVIDED ALONG EACH BOUNDARY ADJACENT TO A PLANNED OR APPROVED RESIDENTIAL SUBDIVISION/ USE.
2. THE MINIMUM BUFFER SHALL BE PROVIDED ALONG ONE FRONT YARD, FOUR SIDE YARDS, AND ONE REAR YARD.

TYPE 2 FRONT YARD BUFFER:	REQUIRED PLANT UNIT PER 100 LINEAL FEET
15-25 FEET WIDTH RANGE	3 CANOPY TREES 2 UNDERSTORY TREES 10 SHRUBS

TYPE 2 SIDE/REAR YARD BUFFER:	REQUIRED PLANT UNIT PER 100 LINEAL FEET
20-30 FEET WIDTH RANGE	2 CANOPY TREES 4 UNDERSTORY TREES 10 SHRUBS 2 EVERGREEN TREES

PLANT MATERIALS:

ALL LANDSCAPING PROVIDED WILL BE COMPRISED OF INDIGENOUS PLANT MATERIALS.

PROPOSED LANDSCAPED BERM:

A LANDSCAPED BERM WILL BE PROVIDED ALONG THE LENGTH OF THE HS PARKING AREA TO SCREEN THE PARKING FROM THE ADJOINING PARK.

PROPOSED PLANTING ENHANCEMENTS TO THE HS BUS LOOP AND ENTRANCE AREA:

IN ADDITION TO THE PROPOSED 25' TYPE 2 FRONT BUFFER THE BUS LOOP ENTRANCE AREA WILL BE ENHANCED BY PROVIDING A COMBINATION OF CANOPY AND ORNAMENTAL FLOWERING TREES TOTALING 8 TREES MINIMUM. SHRUBS WILL ALSO BE PROVIDED AS ACCENTS WITHIN THIS AREA.

THE GRASS AREA TO THE WEST OF THE BUS LOOP WILL BE PLANTED WITH AN INTERNAL SCREEN COMPRISED OF A COMBINATION OF EVERGREEN AND DECIDUOUS TREES WITH SHRUB ACCENTS. A TOTAL MINIMUM OF THIRTY (30) TREES WILL BE PLANTED WITHIN THE GRASS AREA.

PROPOSED PLANTING ENHANCEMENT TO SIDE AND PORTION OF REAR YARD BUFFER:

(TO REAR (670 FEET IN LENGTH) AND SIDE (910 FEET IN LENGTH) OF ES)

A TYPE II SIDE/REAR YARD BUFFER WILL BE PROVIDED. THE BUFFER WILL BE ENHANCED BY PLANTING LEYLAND CYPRESS TREES, 10 FOOT ON CENTER IN A STAGGERED DOUBLE ROW, OFFSET APPROXIMATELY EIGHT FEET FROM THE REQUIRED PLANT UNITS LINE. THE LEYLAND CYPRESS TREES WILL BE 6-8 FEET IN HEIGHT AT THE TIME OF PLANTING.

STORMWATER MANAGEMENT (SWM)/ BEST MANAGEMENT PRACTICES (BMP) NARRATIVE:

AS INDICATED HEREON, SWM/BMP FACILITIES ARE SHOWN TO PROVIDE WATER QUANTITY AND WATER QUALITY CONTROL CONSISTENT WITH REQUIREMENTS OF LOUDOUN COUNTY AND THE COMMONWEALTH OF VIRGINIA. LOW IMPACT DESIGN (LID) IS ANTICIPATED IN THE FORM OF BIORETENTION, PRESERVATION OF WETLANDS, AND PROVISION OF GREEN INFRASTRUCTURE BUFFERS AS SHOWN. IN ORDER TO AVOID IMPACTS TO THE EXISTING WETLAND PRESERVATION AREA AND BUFFER TO THE EAST OF THE SITE, RUNOFF FROM THE SITE WILL BE TREATED AT A REGIONAL SWM/BMP FACILITY LOCATED OFF-SITE, WHICH WILL SERVE BOTH THE SCHOOL SITE AND THE STONE RIDGE COMMUNITY. THE ELEMENTARY SCHOOL SITE WILL LARGELY BE SERVED BY EXTENDED DETENTION FACILITIES IN LOCATIONS APPROXIMATELY AS SHOWN. ADDITIONAL MEASURES TO BE DETERMINED DURING FINAL DESIGN MAY INCLUDE WATER QUALITY SWALES. THE NUMBER, TYPE, SIZE, AND LOCATION OF POSSIBLE SWM/BMP FACILITIES AND POSSIBLE LID AND WATER QUALITY MEASURES ARE TO BE DETERMINED WITH FINAL ENGINEERING.

REFORESTATION PARAMETERS

1. THE APPLICANT SHALL WORK WITH THE COUNTY URBAN FORESTER ON THE DEVELOPMENT OF THE REFORESTATION PLAN.
2. THE REFORESTATION PLAN SHALL BE SUBMITTED TO THE COUNTY URBAN FORESTER FOR REVIEW AND APPROVAL PRIOR TO THE APPROVAL OF THE FIRST SITE PLAN.
3. PLANT MATERIAL SHALL CONSIST OF 3-GALLON CONTAINERIZED NATIVE TREES WITHIN THE FLOODPLAIN AND BARE ROOT SEEDLINGS WITH TUBES OUTSIDE OF THE FLOODPLAIN.
4. THE REFORESTATION SHALL BE IMPLEMENTED PRIOR TO ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY;
5. THE APPLICANT SHALL ENSURE A MINIMUM OF 80 PERCENT OF THE INITIAL PLANTING IS DETERMINED TO BE ESTABLISHED AFTER TWO GROWING SEASONS.
6. AN ANNUAL INSPECTION SHALL BE CONDUCTED BY THE APPLICANT AND THE COUNTY URBAN FORESTER TO VERIFY ESTABLISHMENT.
7. IF THE 80 PERCENT ESTABLISHMENT ISN'T ACHIEVED AFTER THE SECOND GROWING SEASON, A ONETIME PLANTING TO BRING THE PROJECT TO FULL STOCKING SHALL BE CONDUCTED BY THE APPLICANT.

TREE SAVE NARRATIVE:

WITHIN THE AREAS IDENTIFIED ON THE PLAT AS "TREE SAVE AREAS," THE APPLICANT SHALL PRESERVE HEALTHY TREES PROVIDED, HOWEVER, THAT TREES MAY BE REMOVED TO THE EXTENT NECESSARY FOR THE CONSTRUCTION OF TRAILS AND STORMWATER MANAGEMENT FACILITIES THAT ARE REQUIRED PURSUANT TO THE APPROVED CONSTRUCTION PLANS AND PROFILES AS LYING WITHIN SUCH TREE SAVE AREAS AND FOR THE CONSTRUCTION OF UTILITIES NECESSARY FOR DEVELOPMENT OF THE PROPERTY UPON CONSULTATION WITH THE COUNTY'S URBAN FORESTER. A MINIMUM OF EIGHTY (80) PERCENT OF THE CANOPY WITHIN THE CUMULATIVE TREE SAVE AREA DEPICTED ON THE PLAT WILL BE PRESERVED, EXCLUSIVE OF STANDS OF VIRGINIA PINE AND EASTERN RED CEDAR OVER 25 YEARS IN AGE. IN THE EVENT THAT THE EIGHTY (80) PERCENT CANOPY THRESHOLD CANNOT BE ACHIEVED WITHIN THE DESIGNATED TREE SAVE AREAS, SUCH LOST CANOPY WILL BE RECAPTURED ELSEWHERE ON THE PROPERTY IN LOCATIONS TO BE DESIGNATED AT THE DISCRETION OF THE APPLICANT IN CONSULTATION WITH THE COUNTY. BOUNDARIES OF ALL TREE SAVE AREAS SHALL BE DELINEATED ON THE SITE PLAN FOR EACH PHASE OF THE DEVELOPMENT. CANOPY AREA WITHIN THE DESIGNATED TREE SAVE AREAS TOTALS 461,785 SF (10.6 ACRES).

TREE CONSERVATION AREAS SHALL BE PROTECTED DURING CONSTRUCTION BY FENCING, A MINIMUM OF FOUR FEET IN HEIGHT, PLACED AT THE LIMITS OF CLEARING AND GRADING OR AT THE DRIP LINE OF THE TREE CONSERVATION AREA, WHICHEVER IS GREATER. SUCH FENCING SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITY BEING CONDUCTED ON ANY ADJACENT AREA, AND SHALL BE CLEARLY VISIBLE TO ALL CONSTRUCTION PERSONNEL. THE FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. A TEMPORARY SIGN STATING "TREE CONSERVATION AREA – DO NOT DISTURB" (WRITTEN IN BOTH ENGLISH AND SPANISH) SHALL BE POSTED SO AS TO BE CLEARLY VISIBLE TO ON-SITE CONSTRUCTION PERSONNEL.

IF, DURING CONSTRUCTION ON THE PROPERTY, IT IS DETERMINED BY THE APPLICANT'S CERTIFIED ARBORIST AND/OR THE COUNTY THAT ANY HEALTHY TREE LOCATED WITHIN THE BOUNDARIES OF ANY OF THE TREE SAVE AREAS HAS BEEN DAMAGED DURING CONSTRUCTION AND WILL NOT SURVIVE, THEN, THE APPLICANT SHALL REMOVE EACH SUCH TREE AND REPLACE EACH SUCH TREE WITH TWO (2) 2 – 3 INCH CALIPER NATIVE, NON-INVASIVE DECIDUOUS TREES UPON CONSULTATION WITH THE COUNTY'S URBAN FORESTER. THE PLACEMENT OF THE REPLACEMENT TREES SHALL BE PROXIMATE TO THE AREA OF EACH SUCH DAMAGED TREE SO REMOVED, OR IN ANOTHER AREA AS REQUESTED BY THE COUNTY.

AFTER CONSTRUCTION HAS BEEN COMPLETED BY THE APPLICANT, FOREST MANAGEMENT TECHNIQUES, PERFORMED BY OR RECOMMENDED BY A PROFESSIONAL FORESTER OR CERTIFIED ARBORIST, THAT ARE NECESSARY TO PROTECT OR ENHANCE THE VIABILITY OF THE CANOPY MAY BE UNDERTAKEN. SUCH MANAGEMENT TECHNIQUES MAY INCLUDE, WITHOUT LIMITATION, PRUNING AND THE REMOVAL OF VINES, INVASIVE SPECIES, TREES UPROOTED OR DAMAGED BY EXTREME WEATHER CONDITIONS, AND TREES OR LIMBS THAT ARE DISEASED, INSECT-INFESTED, DEAD, OR ARE CONSIDERED A HAZARD TO LIFE OR PROPERTY. THE SITE PLAN FOR EACH PHASE OF THE PROPERTY CONTAINING A TREE SAVE AREA SHALL CONTAIN A NOTE STATING THAT THE REMOVAL OF TREES WITHIN A TREE SAVE AREA IS PROHIBITED EXCEPT IN ACCORDANCE WITH THE PROVISIONS OUTLINED IN THIS NOTE.

TRAFFIC CIRCULATION NOTES:

1. ROAD "A" WILL PROVIDE ACCESS TO THE SCHOOL BUS LOOP AND STAFF PARKING LOT.
2. ROAD "B" WILL PROVIDE ACCESS TO THE HIGH SCHOOL STUDENT/VISITOR PARKING LOT, THE PARENT DROP OFF AND THE ELEMENTARY SCHOOL.
3. THE INTERNAL ROAD BETWEEN THE STAFF AND STUDENT PARKING LOTS WILL BE CLOSED EXCEPT FOR SPECIAL EVENTS WHEN TRAFFIC MAYBE RELEASED VIA BOTH ROAD "A" AND ROAD "B".

LEGEND

- EXISTING WETLANDS
- EXISTING FLOODPLAIN
- MODERATE STEEP SLOPES
- VERY STEEP SLOPES
- WETLANDS PRESERVATION / EASEMENT
- APPROXIMATE LOCATION OF REFORESTATION AREA
- TREE SAVE AREAS
- VEHICULAR ACCESS
- 50' GREEN INFRASTRUCTURE BUFFER
- EXISTING TWO FOOT CONTOUR
- EXISTING TEN FOOT CONTOUR
- PROPOSED BOUNDARY
- ZMAP BOUNDARY
- EXISTING FENCE
- PROPOSED 6' FENCE (BLACK VINYL COATED CHAIN LINK)
- EXISTING TREE LINE
- EXISTING ROADWAY
- EXISTING STRUCTURE
- EXISTING BOUNDARY
- EXISTING WELL & SEPTIC
- EXISTING DRAINAGE

ZMAP 2010-0001 SPEX 2010-0003

SPECIAL EXCEPTION/ REZONING PLAT

HS-7 DULLES SOUTH HIGH SCHOOL AND ELEMENTARY SCHOOL, GOSHEN ROAD ASSEMBLAGE

SPECIAL EXCEPTION/ REZONING PLAT

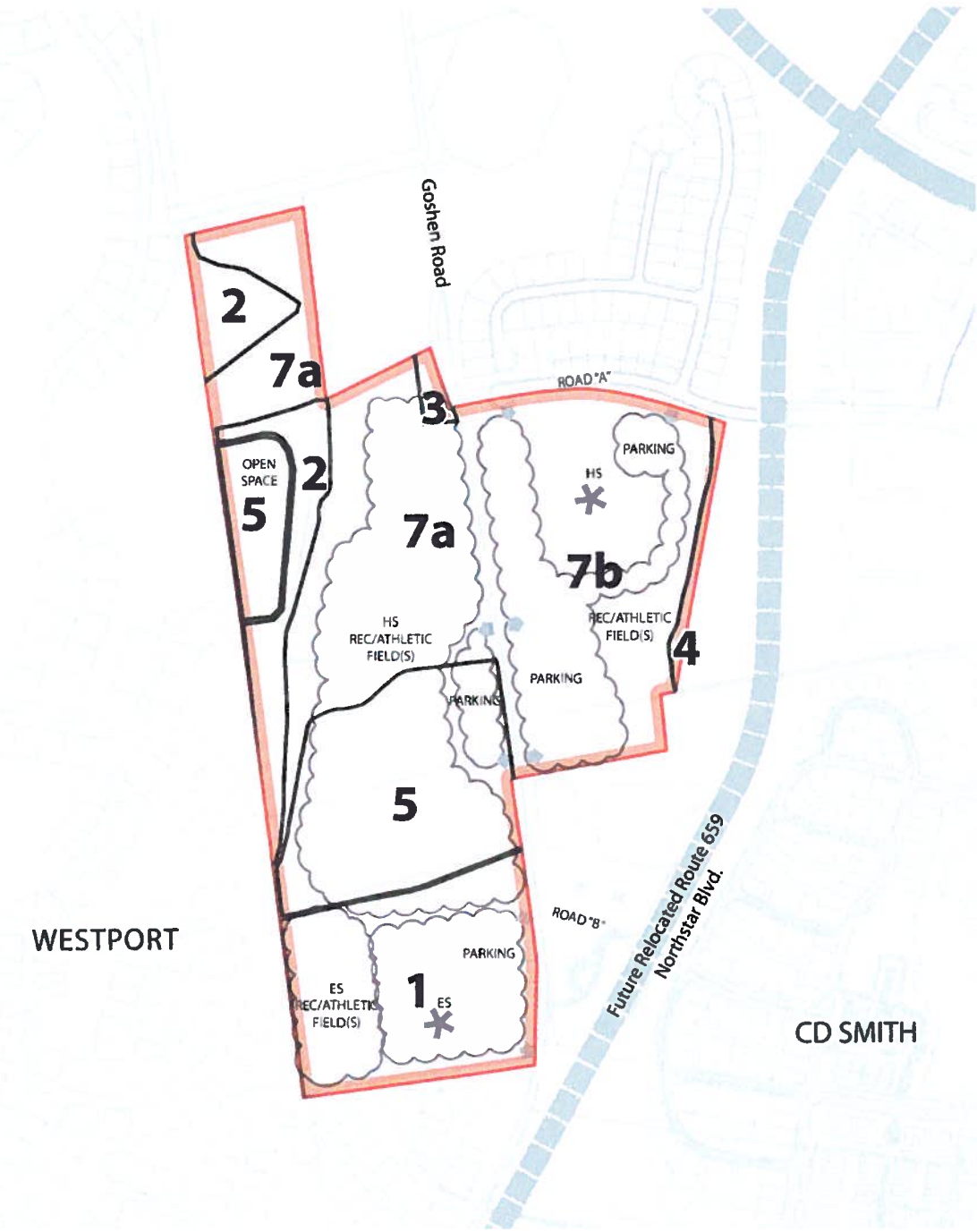
DULLES ELECTION DISTRICT LOUDOUN COUNTY, VIRGINIA

Bowman CONSULTING

PLAN STATUS	
06/08/10	PER COUNTY COMMENTS
07/12/10	PER COUNTY COMMENTS
DATE	DESCRIPTION

BR	JAE	CMM
DESIGN	DRAWN	CHKD

SCALE: H: 1" = 200'
JOB No. 5185-01-002
DATE MARCH 8, 2010
FILE No. 5185-0-ZP-001
SHEET 3 of 7



LEGEND

COVER TYPE 1*:

Uneven-aged, mature (10"-20" DBH), with widely scattered larger trees, primarily oaks, up to 30" DBH. Overstory contains white oak, southern red oak, hickory, scarlet oak, white ash, and widely scattered interspersed Virginia pine. The understory contains mixed oak and hickory, blackhaw, red maple, flowering dogwood, blackgum, white ash, black cherry, and eastern red cedar. No specimen trees were identified within this cover type.

COVER TYPE 2*:

Uneven-aged, young mature-mature (6"-14" DBH) with some scattered larger trees, primarily oaks, up to 26" DBH occurring primarily in wetter areas. Overstory contains white oak, white ash, pin oak, hickory, red maple, and black cherry. The understory contains blackhaw, red maple, eastern red cedar, black cherry, hickory, blackgum, slippery elm, flowering dogwood, and spicebush. Patches of Japanese honeysuckle, wild rose, and greenbrier can also be found in the understory.

COVER TYPE 3*:

Uneven-aged, young mature to mature (10"-20" DBH) with some larger trees present, primarily sycamore, up to 30". Overstory contains red maple, American sycamore, yellow poplar, pin oak, green ash, and southern red oak. The understory contains red maple, eastern red cedar, slippery elm, and spicebush. There is a significant amount of herbaceous ground cover throughout this Cover Type as well as patches of Japanese honeysuckle, wild rose, and greenbrier.

COVER TYPE 4:**

Young mature to mature sweetgum (10"-20" DBH) with scattered trees up to 30" DBH. Overstory contains yellow poplar, red maple, ash, and American sycamore. The understory contains blue beech and spicebush.

COVER TYPE 5*:

Even-aged, immature (4"-6" DBH). Overstory contains eastern red cedar and Virginia pine as well as other, more widely interspersed early successional pioneer tree species such as red maple and black cherry. Eastern red cedar and red maple can also be found in the understory along with white ash to a lesser degree. There are patches of Japanese honeysuckle, wild rose, and blackberry present throughout the understory.

COVER TYPE 7a*:

Immature early successional pioneer tree species that can be found scattered throughout these open areas include red maple, eastern red cedar, black cherry and tree-of-heaven. Larger trees occurring within lawn areas around current and abandoned house sites include white oak, white pine, pin oak, red maple, blue spruce, and black walnut.

COVER TYPE 7b:**

Immature to young mature (3"-12" DBH). Contains Virginia pine, eastern red cedar, black locust, persimmon, and scattered oaks.

* Source from "Forest Management Plan & Cover Type Map" for Westport, prepared by Zimarik Associates, Inc. dated 2-15-2006
Note: Extent and condition of hardwood tree cover associated with Cover Type 1 has been verified via field survey completed by Bowman Consulting Group on 12-14-2009.

** Source from "Cover Type Inventory Report" for Stone Ridge Rezoning, prepared by Zimarik Associates, Inc. dated 4-14-2002

ZMAP 2010-0001 SPEX 2010-0003

SHEET 4 of 7

EXISTING TREE COVER MAP
HS-7 DULLES SOUTH HIGH SCHOOL AND ELEMENTARY SCHOOL, GOSHEN ROAD ASSEMBLAGE
SPECIAL EXCEPTION/ REZONING PLAT
DULLES ELECTION DISTRICT LOUDOUN COUNTY, VIRGINIA

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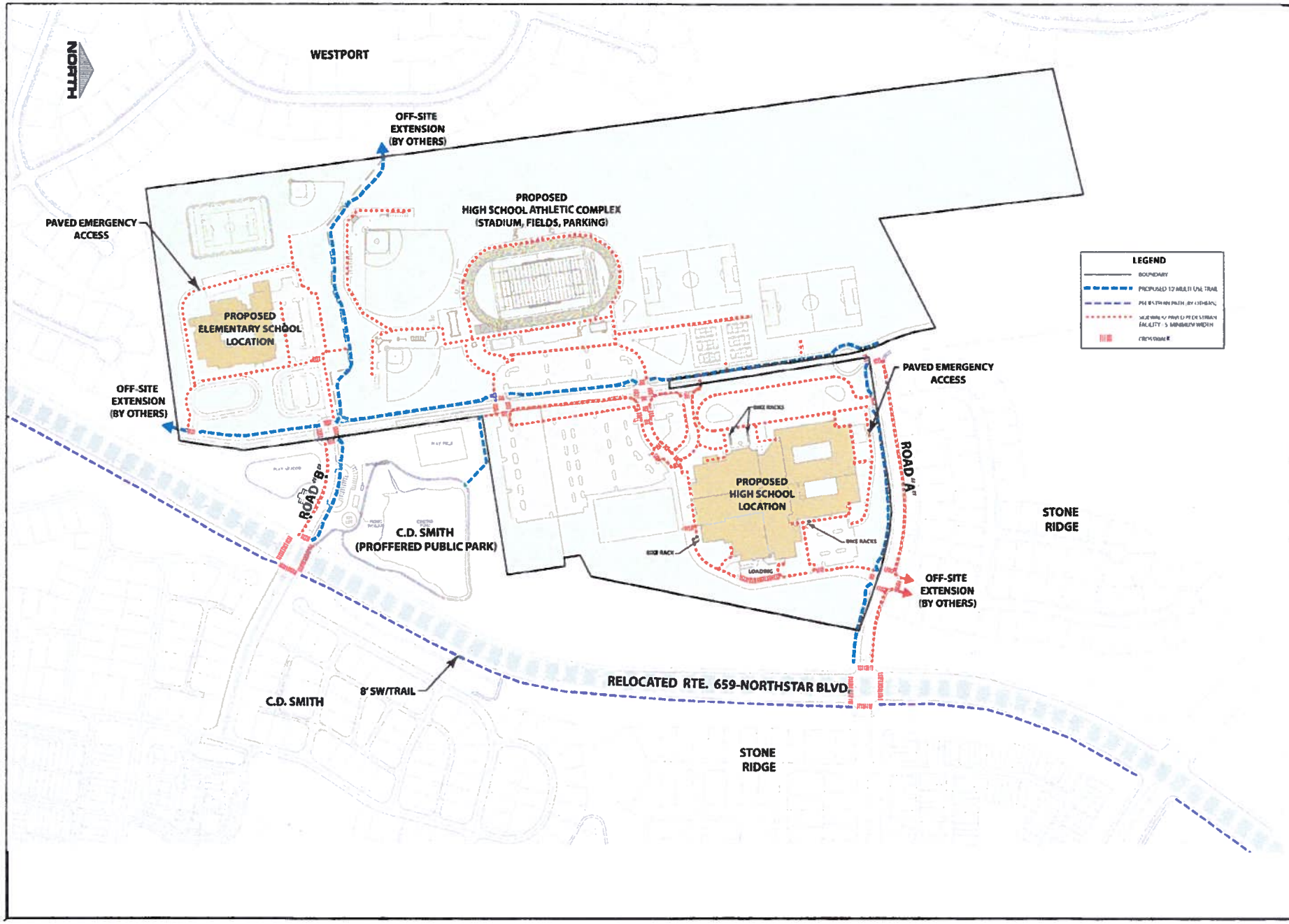

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PEDESTRIAN CIRCULATION MAP

HS-7 DULLES SOUTH HIGH SCHOOL AND ELEMENTARY SCHOOL, GOSHEN ROAD ASSEMBLAGE

SPECIAL EXCEPTION/ REZONING PLAT

DULLES ELECTION DISTRICT LOUDOUN COUNTY, VIRGINIA

PLAN STATUS

DATE	DESCRIPTION
06/09/10	PER COUNTY COMMENTS
07/22/10	PER COUNTY COMMENTS

BR	JAE	CMM
DESIGN	DRAWN	CHKD

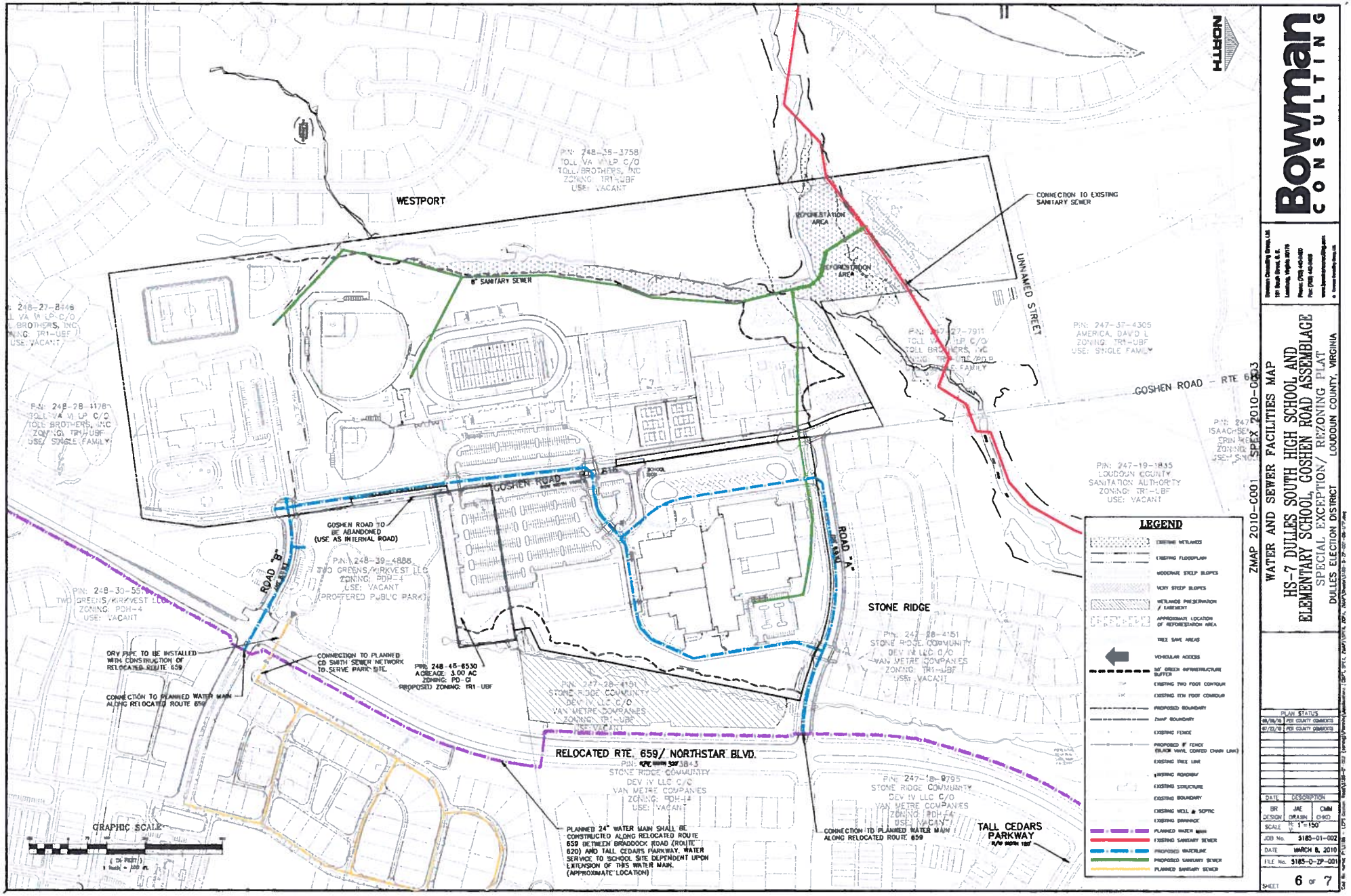
SCALE 1" = 150'

JOB No. 5185-01-002

DATE MARCH 8, 2010

FILE No. 5185-0-ZP-001

SHEET 5 OF 7



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WATER AND SEWER FACILITIES MAP

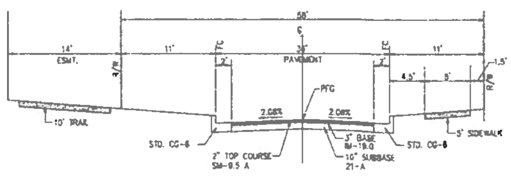
HS-7 DULLES SOUTH HIGH SCHOOL AND ELEMENTARY SCHOOL, GOSHEN ROAD ASSEMBLAGE

SPECIAL EXCEPTION/ REZONING PLAT

DULLES ELECTION DISTRICT LOUDOUN COUNTY, VIRGINIA

PLAN STATUS	
08/09/10	PER COUNTY COMMENTS
07/23/10	PER COUNTY COMMENTS

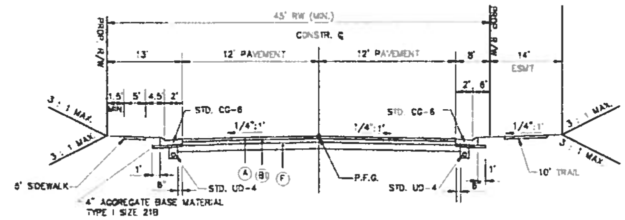
DATE	DESCRIPTION
BR	JAE / CMM
DESIGN	DRAWN / CHKD
SCALE	1" = 150'
JOB No.	3185-01-002
DATE	MARCH 8, 2010
FILE No.	3185-0-ZP-001
SHEET	6 OF 7



ROAD "A" TYPICAL SECTION

(NOT TO SCALE)

*TYPICAL SECTIONS FOR ROAD "A" ARE SUBJECT TO FINAL ENGINEERING OF CPAP 2010-0025



ROAD "B" TYPICAL SECTION

(NOT TO SCALE)

*TYPICAL SECTIONS FOR ROAD "B" ARE SUBJECT TO FINAL ENGINEERING OF CPAP 2010-0045

ZMAP 2010-0001 SPEX 2010-0003

TYPICAL SECTIONS

HS-7 DULLES SOUTH HIGH SCHOOL AND ELEMENTARY SCHOOL, GOSHEN ROAD ASSEMBLAGE

SPECIAL EXCEPTION/ REZONING PLAT

DULLES ELECTION DISTRICT LOUDOUN COUNTY, VIRGINIA

PLAN STATUS	
06/09/10	PER COUNTY COMMENTS
07/22/10	PER COUNTY COMMENTS
DATE	DESCRIPTION

BR DESIGN	JAE DRAWN	CMM CHKD
SCALE	AS SHOWN	
JOB No.	5185-01-002	
DATE	MARCH 8, 2010	
FILE No.	5185-D-ZP-001	
SHEET	7 of 7	

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